RECORD OF DECISION

Operable Unit Three

Rockaway Borough Wellfield Superfund Site

Rockaway, Morris County, New Jersey

United States Environmental Protection Agency

Region II

September 2006

DECLARATION STATEMENT

RECORD OF DECISION

SITE NAME AND LOCATION

Rockaway Borough Wellfield Superfund Site (EPA ID# NJD980654115) Rockaway Borough, Morris County, New Jersey, Operable Unit 3.

STATEMENT OF BASIS AND PURPOSE

This decision document presents the Selected Remedy to address the contamination source for the Wall Street/East Main Street (WS/EM Source Area), which is Operable Unit (OU3) of the Rockaway Borough Wellfield Site in Rockaway Borough, Morris County, New Jersey. This Selected Remedy was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record file for the Site.

The State of New Jersey concurs with the Selected Remedy.

ASSESSMENT OF THE SITE

The remedial action selected in this Record of Decision (ROD) is necessary to protect public health, welfare, or the environment from actual or threatened releases of hazardous substances from the Site into the environment.

DESCRIPTION OF THE SELECTED REMEDY

The Selected Remedy described in this document involves the active remediation of the contaminated groundwater WS/EM Source Source Area at the Site. A previous ROD, signed on September 30, 1991, selected a remedy for contaminated groundwater associated with this source area, as operable unit 2 (OU2). This decision document addresses the source of the WS/EM groundwater contamination (OU3). A fourth operable unit (OU4) will address the contamination source related to the Klockner and Klockner contaminated groundwater (K&K Source Area). The Klockner and Klockner (K&K) contaminated groundwater is being remediated by a Potentially Responsible Party, also as part of OU2.

The major components of the Selected Remedy include:

- Excavation of an estimated 40 cubic yards of soil contaminated with volatile organic compounds;
- Off-site treatment and/or disposal; and
- Soil Vapor Extraction (SVE), if necessary to augment the soil excavation.

DECLARATION OF STATUTORY DETERMINATIONS

Part 1: Statuary Requirements

The selected remedial action is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. The Selected Remedy utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable.

Part 2: Statutory Preference for Treatment

Excavation with off-site treatment and/or disposal, with SVE of the source area as necessary, satisfies the statutory preference for treatment as a principal element of the remedy (i.e., reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment).

Part 3: Five-Year Review Requirements

Because this remedial action will not result in hazardous substances, pollutants, or contaminants remaining on the Site above levels that allow for unrestricted and unlimited exposure, the five-year review will not apply to this action related to the WS/EM Source Area.

ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record for this site.

- Chemicals of concern and their respective concentrations may be found in the "Site Characteristics" section.
- Current and reasonably-anticipated future land and groundwater use assumptions are discussed in the "Current and Potential Future Site and Resources Uses" section.
- Baseline risk represented by the chemicals of concern may be found in the "Summary of Site Risks" section.
- A discussion of the goals of the cleanup and of cleanup levels for chemicals of concern may be found in the "Remedial Action Objectives" section.
- A description of the cleanup alternatives evaluated and estimated capital, annual operation and maintenance (O&M), and total present worth costs are discussed in the "Description of Alternatives" section.
- Key factors that led to selecting the remedy (i.e., how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decisions) may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections.
- A discussion of source area materials constituting principal threats may be found in the "Principal Threat Waste" section.

George Pavlou, Director
Emergency and Remedial Response Division

9/29/06
Date

Record of Decision
Decision Summary

Operable Unit Three

Rockaway Borough Wellfield Site
Rockaway Borough, Morris County
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SITE NAME, LOCATION, AND DESCRIPTION

The Rockaway Borough Wellfield Site is located in Rockaway Borough in Morris County, New Jersey (Figure 1). Rockaway Borough is situated in the center of Morris County, approximately 10 miles north of Morristown and 20 miles northwest of Newark in the north-central portion of the state.

The Wall Street/East Main Street (WS/EM) Source Area (Figure 2) is a portion of the larger Rockaway Borough Wellfield Superfund Site. The Rockaway Borough Wellfield Superfund Site includes three municipal water supply wells (Nos. 1, 5, and 6), which are located off Union Street in the eastern section of the Borough. The groundwater at the municipal water supply wells is contaminated primarily with tetrachloroethene (PCE) and trichloroethene (TCE). Based on prior investigations, the suspected sources of the TCE and PCE contamination included industrial operations within the Borough, including the Klockner and Klockner (K&K) facility, and a dry cleaning operation (Lusardi's Cleaners, Inc.).

Low concentrations of metals including chromium, lead and nickel are also present in WS/EM Source Area soil. A former foundry, the M. Hoagland Union Foundry, operated in the WS/EM Source Area and is a potential source of the metals detected in soils. Metals, however, are not associated with the groundwater contamination at the site. Additionally, the human health risk assessment for the WS/EM Source Area did not find unacceptable risks or hazards associated with exposure to metals in soil.

The WS/EM Source Area is primarily comprised of a commercial area in the heart of downtown Rockaway Borough, Morris County, New Jersey. The remedial investigation and feasibility study (RI/FS) study area for OU3 encompassed businesses located in this area including dry cleaning, auto body repair, auto service and repair, banking, hardware, hair dressing, convenience stores, and food establishments. Borough Police and Fire Departments, Memorial Park, and municipal parking lots are also located within the area studied for the OU3 RI/FS.

The developed portions of the WS/EM Source Area are covered by impervious surfaces including asphalt roadways and

driveways, concrete building slabs and sidewalks, and asphalt parking areas. A limited number of small, fragmented areas of exposed soils comprising suburban parkland, mowed lawns, ballfields and playgrounds, and fragmented areas of forested habitats, occur in the developed area of the WS/EM Source Area.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Investigations, conducted by the New Jersey Department of Environmental Protection (NJDEP) at the Rockaway Borough Wellfield site since 1980, indicated the presence of volatile organic compounds (VOCs), primarily trichloroethylene (TCE) and tetrachloroethylene (PCE) in the groundwater. Several inorganic compounds including chromium, lead, and nickel were also identified. This contamination, which has affected the wellfield, emanates from multiple source areas within Rockaway Borough.

The presence of VOC contamination caused the Borough of Rockaway to construct a three-bed granular activated carbon adsorption treatment system to treat the municipal water supply. The system began operating in July 1981, treating approximately 900,000 gallons per day of raw water pumped from the Borough's wells. Overall, the system has reduced the VOC contaminant concentrations in the municipal water supply to levels meeting the state and federal drinking water standards.

In December 1982, the site was placed on the United States Environmental Protection Agency (EPA) National Priorities List of Superfund Sites. Under a cooperative agreement with EPA, NJDEP initiated an RI/FS to determine the nature and extent of contamination. The RI/FS utilized a soil gas survey that identified three potential source areas within the Borough, although the horizontal and vertical extent of groundwater and soil contamination was not defined. As part of the study, remedial alternatives were developed and evaluated to address the known contamination.

On September 29, 1986, at the conclusion of the NJDEP RI/FS, EPA signed a ROD for the first operable unit. The ROD called for the continued use of the existing carbon treatment system operated by Rockaway Borough, and directed the commencement of a supplemental RI/FS in order to

identify the contaminant source(s), further delineate the full extent of the contamination, and evaluate additional remedial action alternatives to address those sources.

Based on these findings, EPA initiated a Phase II RI/FS to identify the contaminant sources, further delineate the full extent of contamination and evaluate remedial action alternatives to address the sources of contamination.

Some of the major findings and conclusions of the Phase II RI/FS were as follows:

- PCE groundwater contamination emanating from the WS/EM Source Area was impacting municipal wells No. 1 and 5;
- TCE groundwater contamination emanating from the K&K property was impacting municipal well No. 6;
- Groundwater contamination from VOCs was present in the Roned Realty Industrial Area (an industrial park in Rockaway Borough).

On September 30, 1991, EPA issued a ROD selecting a remedy for OU2, the VOC plumes in groundwater that are migrating to the Borough Wellfield. The selected remedy called for the remediation of the K&K and WS/EM groundwater plumes, and no further action in relation to the Roned Realty Industrial Area. The selected remedy included groundwater extraction and treatment by air stripping and chemical precipitation; reinjection of the treated groundwater to the aquifer; and appropriate environmental monitoring to ensure the effectiveness of the remedy.

The OU2 ROD also directed further investigation to identify the source areas for the groundwater, and further delineate the full extent of contamination. In 2003, EPA began an RI/FS with respect to the WS/EM Source Area. An RI/FS for the K&K Source Area, which will be addressed as OU4, is also underway.

Two Remedial Designs (RDs) have been completed to address the groundwater contamination (OU2). In 1994, EPA entered into a Consent Decree with Alliant Techsystems (ATK), a Potentially Responsible Party (PRP) for the K&K groundwater plume, requiring ATK to undertake the RD for both contaminated groundwater plumes that comprise OU2 of the Rockaway Borough Wellfield site, and to perform the

Remedial Action (RA) for the K&K contaminated groundwater plume. ATK has completed the RA for the K&K plume and the groundwater treatment system is currently operational.

EPA is presently conducting RA activities for the WS/EM contaminated groundwater plume.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The RI/FS Report and the Proposed Plan for OU3 of the Rockaway Borough Wellfield Site were released to the public for comment on August 11, 2006. These two documents were made available to the public as part of the administrative record maintained at EPA's Records Center, a copy of which is located at the Rockaway Borough Free Public Library. The notice of availability for these two documents was published in the Morris County Daily Record on August 11, 2006. A public comment period on the documents was held from August 11, 2006 to September 11, 2006. In addition, a public meeting was held on August 23, 2006. At this meeting, representatives from NJDEP and EPA were available to answer questions about the contamination at the WS/EM Source Area and the remedial alternatives that were evaluated. EPA's response to the comments and questions received during this period is included in the Responsiveness Summary, which is part of this ROD.

SCOPE AND ROLE OF RESPONSE ACTION

As with many Superfund sites, the problems at the Rockaway Borough Wellfield Site are complex. As a result, EPA has organized the remedial work into four operable units. This ROD addresses the third of four operable units for this Site.

- OU1 was developed to protect public health by providing a reliable supply of safe, potable water to those consumers currently dependent on the Rockaway Borough Wellfield. A ROD for OU1 was signed in 1986 requiring the continuation of their activated carbon treatment system and to continue to attempt to identify the contaminant source(s), further delineate the full extent of contamination, and evaluate additional remedial action alternatives to address those sources.

- **OU2** addresses the contaminated groundwater that is impacting the Rockaway Borough Wellfield. The OU2 ROD selected a pump and treat system to capture and treat the most contaminated groundwater before it reaches the Wellfield.

- **OU3** addresses the remediation of the identified contaminant source in the soil at the WS/EM Source Area that is adversely impacting the groundwater. This action addresses the principal threats posed by the conditions at WS/EM Source Area.

- **OU4** will address the remediation of the identified contaminant source in the soil at the K&K Source Area. An RI/FS is currently underway with respect to OU4.

Summary of Site Characteristics

The RI for the WS/EM Source Area portion of the Rockaway Borough Wellfield Site was initiated in June 2003 to identify the source and extent of soil contamination. The RI Report, finalized in May 2005, concluded that data collected during the RI field investigation indicate that the WS/EM Source Area soils are contaminated at levels that warranted further evaluation in an FS.

The nature and extent of contamination was assessed as part of the Site evaluation. Due to historic operations, such as dry cleaning, EPA determined that areas of the Site had the potential to be contaminated with PCE and other constituents. The RI Site Reconnaissance included the surveying of site areas for buried materials and possible source areas using geophysical survey techniques. In addition, the sampling of soil gas, shallow soils and subsurface soils was performed to delineate the nature and extent of potential contamination in the soils.

Data Collection and Analyses

An on-site mobile laboratory analyzed soil gas samples from vadose zone soils for select volatile organics. Analyzed compounds included TCE, PCE, 1,1-dichloroethene (DCE), cis-1,2-DCE, 1,1-dichloroethane (DCA), 1,1,1-trichloroethane (TCA), chloroethane, and vinyl chloride. A gas chromatograph, equipped with an electron capture detector

and Flame Ionized Detector, was used during on-site analysis of the vapor samples.

The soil samples were analyzed by off-site laboratories for Target Compound List (TCL) VOCs and select metal constituents (chromium, lead, and nickel), as per the EPA Contract Laboratory Program (CLP) Statements of Work (SOWs) OLM04.3 and ILM04.1, respectively. Soil samples were also analyzed for hexavalent chromium, following SW-846 Method 7196A. In addition, six soil cores from the 4 to 8 feet below ground surface (bgs) interval, one each from locations S-03 through S-08 (see Figure 3), were analyzed for the following geotechnical parameters: total porosity, dry bulk density, volumetric water content, natural water content, specific gravity, grain size, and organic carbon.

Previous Sampling Investigation

EPA performed a site-wide RI from 1990 to 1991. During this investigation, 17 subsurface soil samples were collected from 5 soil borings and 10 monitoring well boring locations. Soil samples were collected using split-spoon samplers. Auger refusal and poor recovery limited the number of samples collected per location. The soil samples were analyzed through the EPA CLP for TCL VOCs, SVOCs, pesticides and PCBs, and inorganics, and the data results were validated by certified personnel.

Of the samples collected during the earlier RI, only one soil sample was obtained from within the OU3 RI/FS study area, from a depth of 6 to 8 feet bgs. No VOCs were detected in the soil sample, and the lead, chromium and nickel detected were at low concentrations.

Contaminant Source Investigation

Soil Sampling Information

An evaluation of historical information was performed to determine potential contaminant source areas. Aerial photographs dating from the 1940s to the 1990s were reviewed in order to acquire a representative understanding of property developments. The results of additional historical record searches were included as part of the *Stage 1A Cultural Resources Investigation Report* and *Archeological Monitoring Report*.

During the records review, dry cleaning companies (i.e., Lusardi's Cleaners, Rockaway Cleaners) and auto service/repair shops (i.e., R&R Friendly Service, H&L Auto Repair, Mirror Image Auto Body, Mikron Auto Body) were found to be potential past and current users of chlorinated solvents such as PCE and/or TCE. Historical usage by companies other than these was not discovered.

Geophysical Survey

A geophysical survey was conducted at the WS/EM Source Area in August 2003, to examine subsurface conditions and delineate possible areas of subsurface contamination. In general, the results showed many areas with buried metallic objects, including subsurface pipes or other utilities (e.g., linear anomalies in Municipal Parking Lots #1 & #2).

The survey indicated that different fill materials may have been used in the WS/EM Source Area, as the baseball field in Memorial Park had higher conductivity soils than the playground portion. In the northeastern portion of the survey area (the baseball field and area to the northwest), an area of increasing metallic component in the deeper subsurface was noted. This area is at least 100 feet in length and 70 feet in width and trends approximately northeast-southwest. This feature may continue out of the surveyed area to the northwest and/or northeast, and may be a reinforced concrete pad or a large area of metallic debris.

The former Morris Canal was not apparent in the survey. This is probably due to the large quantity of utilities that are now present within the canal footprint. Any potential conductivity anomaly from the former canal is most likely overshadowed by the presence of utilities and the disparate fill materials used to bring the canal to its current grade.

The results of the geophysical survey did not provide any specific information that would identify potential source areas.

Soil Gas Survey

The contaminant of concern detected during the soil gas survey at elevated levels was PCE. PCE was generally present throughout the WS/EM Source Area, with detected

concentrations ranging from 0.002 micrograms per liter (ug/L) to 9,700 ug/L. An isoconcentration contour map was developed for PCE in the soil gas samples collected at approximately 5 feet bgs, utilizing the mobile laboratory results, and presents the potential horizontal extent of soil gas contamination. An area of potential concern (i.e., greater than 100 ug/L) is indicated in the vicinity of 2 Wall Street, and this area was enlarged. *In-situ* soil gas from location SG01B-MP-5 (southern portion of Municipal Parking Lot #2, north of 2 Wall Street) contained the maximum concentration (i.e., 9,700 ug/L) of PCE. Other elevated values in this area include 340 ug/L (SG01-MP, to the north); 670 ug/L (SG03-LB, to the south); and 430 ug/L (SG04-LB, to the southeast). These four locations were also sampled at a deeper depth interval (either 8 or 10 feet bgs). For the two Municipal Parking Lot #2 samples (SG01-MP and SG01B-MP-10), PCE concentrations decreased with depth (i.e., to 230 ug/L and 460 ug/L, respectively).

The concentration of PCE in the two soil gas locations installed in the basement of 2 Wall Street, SG03-LB and SG04-LB, increased to 790 ug/L and 670 ug/L, respectively, in the 8 and 10-foot bgs samples, respectively.

The central area with elevated PCE soil gas concentrations was investigated further during soil boring activities. Based on the lack of significant amounts of PCE in the soil gas samples, further activities were not performed in the areas to southeast (Rockaway Cleaners, Mirror Image Auto Body, H&L Auto Repair, and R&R Friendly Service), or southwest (Mikron Auto Body).

SOIL INVESTIGATION

To determine potential sources and to obtain an understanding of the extent of the soils contamination at the WS/EM Source Area, sampling of the surface, shallow subsurface and deep subsurface soil occurred during the field investigation.

Surface Soils

Surface soils (i.e., 0 to 1 foot bgs) were collected from each of the 17 boring locations, along with two duplicate samples (for a total of 19 soil samples). Surface soils showed constituents present in the background soil locations (i.e., S-01, S-10 and D-01) (Figure 3).

Volatile Organic Compounds

Eleven individual VOCs were detected in the surface soils. A majority of these constituents (i.e., 9 of the 11; or 82 percent) were present at concentrations less than their respective most conservative criteria values evaluated in the Baseline Human Health Risk Assessment for the WS/EM Source Area (BHHRA). However, PCE was present in 10 of the 19 (53 percent) surface soil samples.

Two VOCs, benzene and PCE, occurred above most conservative criteria values evaluated in the BHHRA for the WS/EM Source Area. The only exceedance concentration of benzene (90 micrograms per kilogram (ug/kg)) was detected in boring D-03 (Figure 3). This value is three times greater than benzene's most conservative criteria value, BHHRA for the WS/EM Source Area, of 30 ug/kg. As D-03 is located in Municipal Parking Lot #2, the exceedance of benzene may be related to vehicle fuels (such as gasoline) being released/spilled in this area.

PCE occurred at concentrations exceeding its most conservative criteria value evaluated in the BHHRA for the WS/EM Source Area, (i.e., 60 ug/kg) in surface soil samples from S-05 (950 ug/kg), S-05A (12,000 ug/kg), S-06 (62 ug/kg), and D-04 (14,000 ug/kg). Lower concentrations of PCE were present in five other locations (i.e., detected range: 4 to 49 ug/kg). PCE was not detected in any of the three background locations. The more elevated concentrations of PCE in surface soil are present in the central portion of the WS/EM Source Area, including in the vicinity of the elevated soil gas occurrences. Two areas of elevated concentrations are shown, in the vicinity of S-05, S-05A and S-06, and around D-04. The S-05/S-05A/S-06 area is relatively bounded on the northeast (S-05B), southwest (S-02/S-03) and northwest (S-04) by locations with PCE less than its most conservative criteria value evaluated in the BHHRA for the WS/EM Source Area. The D-04 "hot spot" exceedance is also relatively bounded to the northwest (S-07), north (D-03) and east (S-08). Supplemental sampling in April 2006 further determined the horizontal and vertical extent of contamination for the Municipal Parking Lot #2 as well as the parking lot of 21 Maple Avenue.

Metals

Low concentrations of metals including chromium, lead and nickel are also present in WS/EM Source Area soil. A former foundry, the M. Hoagland Union Foundry, operated in the WS/EM Source Area and is a potential source of the metals detected in soils. Metals, however, are not associated with the groundwater contamination at the site. Additionally, the human health risk assessment for the WS/EM Source Area did not find unacceptable risks or hazards associated with exposure to metals in soil.

Subsurface Soils

Shallow subsurface soils (i.e., 1 to about 10 feet bgs) were collected from ten locations (S-01 through S-10; Figure 3), while deeper subsurface soils (i.e., about 8 to 42 feet bgs) were collected from five locations (D-01 through D-05). A total of 46 subsurface soil samples and 2 duplicate samples were analyzed, and summaries of the detected constituents for all subsurface soil depth intervals are provided for background.

Volatile Organic Compounds

Ten individual VOCs were detected in the subsurface soils. Seven of these constituents (or 70 percent) were present at concentrations less than their respective most conservative criteria values evaluated in the BHHRA for the WS/EM Source Area, although detected concentrations ranged up to 1,100 ug/kg (acetone in the 2 to 4-foot bgs interval of S-05A). Frequencies of detection ranged between 2 percent (i.e., one occurrence; for ethylbenzene, styrene, and xylenes) and 44 percent (i.e., 21 occurrences; for PCE). For the subsurface soils, the three VOC constituents present at concentrations that were greater than their respective most conservative criteria values evaluated in the BHHRA for the WS/EM Source Area were benzene, methylene chloride, and PCE.

Both benzene and methylene chloride were present at exceedance concentrations in location D-03 (at 8 to 10 feet bgs). These two constituents were present at 72 ug/kg and 68 ug/kg, respectively, which are greater than their criteria values evaluated in the BHHRA for the WS/EM Source Area of 30 ug/kg and 20 ug/kg. The surface soil sample from D-03 also contained an exceedance level of benzene,

and the exceedance of benzene in this area may be related to fuel residuals at this boring location (i.e., Municipal Parking Lot #2).

PCE was detected at concentrations greater than its criteria value evaluated in the BHHRA for the WS/EM Source Area in four depth interval samples from three boring locations. PCE exceedances included: 510 ug/kg at 6 to 8 feet bgs in S-03; 730 ug/kg at 8 to 10 feet bgs in S-03; 64 ug/kg at 8 to 10 feet bgs in S-05; and 260 ug/kg at 2 to 4 feet bgs in S-05A. The potential horizontal extent of PCE in the subsurface soils across the entire WS/EM Source Area was contoured based on the maximum concentration detected at a sampling location. Supplemental sampling in April 2006 further determined the horizontal and vertical extent of contamination in Municipal Parking Lot #2 as well as the parking lot of 21 Maple Avenue.

Metals

Low concentrations of metals including chromium, lead and nickel are also present in WS/EM Source Area soil. A former foundry, the M. Hoagland Union Foundry, operated in the WS/EM Source Area and is a potential source of the metals detected in soils. Metals, however, are not associated with the groundwater contamination at the site. Additionally, the human health risk assessment for the WS/EM Source Area did not find unacceptable risks or hazards associated with exposure to metals in soil.

Summary

The nature and extent of soil contamination present in the WS/EM Source Area was assessed through sampling of surface, shallow subsurface and deep subsurface soils. In addition, available historical information and the results of the geophysical and soil gas surveys were evaluated to assist in the determination of potential contaminant source areas.

PCE is the primary contaminant at the WS/EM Source Area. It is present at elevated concentrations in the soil (i.e., up to 14,000 ug/kg in the surface and 730 ug/kg in the subsurface) adjacent to the building at 2 Wall Street and the parking lot at 21 Maple Avenue.

Low concentrations of metals including chromium, lead and nickel are also present in WS/EM Source Area soil. A former foundry, the M. Hoagland Union Foundry, operated in the WS/EM Source Area and is a potential source of the metals detected in soils. Metals, however, are not associated with the groundwater contamination at the site. Additionally, the human health risk assessment for the WS/EM Source Area did not find unacceptable risks or hazards associated with exposure to metals in soil.

CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

Site Uses

The area has been developed by commercial businesses and light industries including bookstores, restaurants, hobby stores, print shop, etc. It is unlikely that this development scenario will change in the future.

Resource Uses

The contaminated soil is located below a municipal parking lot adjacent to 2 Wall Street and a commercial parking lot at 21 Maple Avenue. Contamination may also extend beneath the building at 2 Wall Street.

SUMMARY OF SITE RISKS

Based upon the results of the RI, a baseline risk assessment was conducted to estimate the risks associated with current and future site conditions. The baseline risk assessment process, which is explained below, estimates the human health risk that could result from the contamination at the WS/EM Source Area if no remedial action were taken. The risk assessment found that the risks and hazards associated with soil exposure are within or below EPA's acceptable values. However, the soil concentrations of PCE are above the concentrations that are associated with an adverse impact to groundwater; thus, there is a need to address the soil through a remedial action.

HUMAN HEALTH RISK ASSESSMENT

A four-step process is used for assessing site-related human health risks for a reasonable maximum exposure scenario: Hazard Identification - identifies the contaminants of concern at the site based on several factors such as

toxicity, frequency of occurrence, and concentration. Exposure Assessment - estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., ingesting contaminated well-water) by which humans are potentially exposed. Toxicity Assessment - determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of effect (response). Risk Characterization - summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks.

Hazard Identification

EPA conducted a baseline risk assessment to evaluate the potential risks to human health and the environment associated with the WS/EM Source Area in its current state. The risk assessment evaluated many contaminants identified in the soils, but only PCE was identified as a contaminant of potential concern, primarily from direct contact with the contaminated soils. This section of the decision summary will focus on the risks associated with this contaminant in the soils. A summary of the concentrations of PCE in the soils is provided in Table 1. Concentrations of other contaminants found in soil, such as chromium, lead, and nickel, either did not exceed conservative risk-based screening values or exposure to them was not associated with unacceptable risks or hazards.

Exposure Assessment

EPA's baseline risk assessment addressed the potential risks to human health by identifying several potential exposure pathways by which the public may be exposed to contaminant releases at the WS/EM Source Area under current and future land use conditions. The area is currently used for a commercial purposes, and any future use is expected to be the same. Therefore, the baseline risk assessment focused on health effects for populations typically associated with commercial facilities, including drycleaning workers and future construction workers, who could come in contact with contaminated surface and subsurface soils.

In addition, due to the potential for exposure from inhalation of vapors from the VOCs in the soils by drycleaning workers, customers and users of the gym located

above Lusardi's, this pathway was qualitatively evaluated using risk-based screening values derived according to the methodology found in the 2002 EPA Draft Guidance for Evaluation the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils. Follow-up vapor intrusion sampling is planned for this area.
For all media, the reasonable maximum exposure, which is the greatest exposure that is likely to occur at the WS/EM Area, was evaluated. Table 2 presents all exposure pathways considered in the risk assessment, and the rationale for the inclusion of each pathway. Exposure media, exposure points, and characteristics of receptor populations are also included.

Toxicity Assessment

Under current EPA guidelines, the likelihood of carcinogenic (cancer-causing) and noncarcinogenic (systemic) effects due to exposure to WS/EM Source Area chemicals are considered separately. Consistent with EPA guidance, it was assumed that the toxic effects of the site-related chemicals would be additive. Thus, carcinogenic and noncarcinogenic risks associated with exposures to individual contaminants of concern were summed to indicate the potential risks associated with mixtures.

Noncarcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intake and safe levels of intake (reference doses and inhalation reference doses). Reference doses (RfDs) and inhalation reference doses (RfDis) have been developed by EPA for indicating the potential for adverse health effects. RfDs and RfDis, which are expressed in units of milligrams per kilogram per day (mg/kg-day), are estimates of daily exposure levels for humans thought to be safe over a lifetime (including sensitive individuals). Estimated intakes of chemicals from environmental media (e.g., the amount of a chemical vapor inhaled) are compared with the RfD or RfDi to derive the hazard quotient for the contaminant in the particular medium. The HI is derived by adding the hazard quotients for all compounds within a particular medium that impact a particular receptor population.

An HI greater than 1 indicates that the potential exists for noncarcinogenic health effects to occur because of site-related exposures. The HI provides a useful reference point

for gauging the potential significance of multiple contaminant exposures within a single medium or across media. The toxicity values, including reference dose and inhalation reference dose for PCE, are presented in Table 3.

Potential carcinogenic risks were evaluated using the cancer slope factors developed by EPA for the contaminants of potential concern. Cancer slope factors (SFs) and inhalation cancer slope factors (SFis) have been developed for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. SFs and SFis, which are expressed in units of $(mg/kg\text{-}day)^{-1}$, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to generate an upper-bound estimate of the excess lifetime cancer risk associated with exposure to the compound at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the SF or SFi. Use of this approach makes the underestimation of the risk highly unlikely. The SF and SFi values used in this risk assessment for PCE are presented in Table 4.

Risk Characterization

The quantitative hazard and risk calculations were based on reasonable maximum exposure scenarios. These estimates were developed by taking into account various conservative assumptions about the likelihood of a person being exposed to these media.

The noncarcinogenic HI for PCE is presented in Table 5. It does not exceed EPA's threshold of 1, and therefore non-cancer health effects are unlikely to occur.

For known or suspected carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen. These risks are probabilities that usually are expressed in scientific notation (such as 1×10^{-4}). An excess lifetime cancer risk of 1×10^{-4} indicates that one additional incidence of cancer may occur in a population of 10,000 people who are exposed under the exposure conditions identified in the BHHRA. As stated in the NCP, the acceptable risk range for site-related exposure is 10^{-4} to 10^{-6} (or approximately one in 10,000 to one in one million).

As shown in Table 6, the excess lifetime cancer risk for the current/future drycleaning workers at the WS/EM Source Area is 7.76×10^{-6}, which is within EPA's acceptable range.

Although the risks and hazards associated with the soil exposure via direct contact (ingestion, dermal, and inhalation) are within or below EPA's acceptable values, the soil concentrations of PCE are above the concentrations that are associated with an adverse impact to groundwater. The PCE in soil is a source of groundwater contamination and has contributed to the risks associated with the ingestion of contaminated groundwater. Thus, PCE is a Chemical of Concern (COC) in soil and there is a need to address the soil through a remedial action.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is uncertainty as to the actual levels present. Environmental chemistry analysis error can stem from several sources, including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Fate and transport modeling is also associated with a certain level of uncertainty. Factors such as the concentrations in the primary medium, rates of transport, ease of transport, and environmental fate all contribute to the inherent uncertainty in fate and transport modeling.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the chemicals of concern, the period of time over which such exposure would occur, and in the models used

to estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, and from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near the WS/EM Source Area, and is highly unlikely to underestimate actual risks related to the WS/EM Source Area.

More specific information concerning public health and environmental risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the risk assessment report.

Actual or threatened releases of hazardous substances from this WS/EM Source Area, if not addressed by implementing the response action selected in the ROD, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

Qualitative Ecological Risk Assessment

A Screening Level Ecological Risk Assessment (SLERA) was performed for the WS/EM Source Area. The SLERA determined that based on the majority of the observed concentrations being comparable to background or below screening level benchmark values and the lack of usable terrestrial habitat for ecological receptors at the WS/EM Source Area, risks to ecological receptors are deemed to be low. Therefore, ecologically based screening criteria are not presented and will not be utilized to assist in the interpretation of the nature and extent of soil contamination at the WS/EM Source Area.

REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards such as applicable or relevant and appropriate requirements (ARARs) and risk-based levels established in the risk assessment.

The overall remediation goal for the site is to protect human health and the environment. An RAO has been identified to mitigate the potential risks associated with the WS/EM Source Area.

Soil

The RAO for the contaminated soil at the WS/EM Source Area is:

- Reduce the potential for further migration of PCE from the contaminated soil into groundwater.

The remediation goal for PCE in soil was identified from the New Jersey Impact to Groundwater Soil Criteria and is 1 mg/kg.

DESCRIPTION OF REMEDIAL ALTERNATIVES

CERCLA requires that each remedial alternative be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility or volume of hazardous substances.

CERCLA requires that if a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at a site above levels that allow for unlimited use and unrestricted exposure, EPA must review the action no less often than every five years after initiation of the action. In addition, institutional controls (e.g., a deed notice, an easement or a covenant) to limit the use of portions of the property may be required. These use restrictions are discussed in each alternative as appropriate. Consistent with expectations set out in the National Contingency Plan (NCP), none of the remedies rely exclusively on institutional controls to achieve protectiveness. The time frames below for construction do not include the time for remedial design or the time to procure contracts.

Remedial alternatives for the WS/EM Source Area are presented below.

Alternative S-1: No Action
Estimated Capital Cost: $0
Estimated Annual O&M Cost: $0
Estimated Present Worth: $0
Estimated Construction Time Frame: None

Regulations governing the Superfund program require that the "no action" alternative be evaluated to establish a baseline for comparison. Under this alternative, EPA would take no action at the WS/EM Source Area to prevent the migration of the contamination to the groundwater. Since this alternative would not result in contaminants remaining at the WS/EM Source Area at levels that would not allow for unlimited use and unrestricted exposure, a five-year review would not be required. This alternative would result in the continued contamination of the groundwater.

Alternative S-2: Limited Action
Estimated Capital Cost: $27,000
Estimated Annual O&M Cost: $0
Estimated Present Worth: $0
Estimated Construction Time Frame: None

The Limited Action Alternative would include implementation of administrative controls such as a deed notice. The deed notice, or comparable administrative controls, would be implemented to ensure that future activities at the WS/EM Source Area would be performed with knowledge of the WS/EM Source Area conditions. Since this alternative would not result in contaminants remaining at the WS/EM Source Area at levels that would not allow for unlimited use and unrestricted exposure, a five-year review would not be required. This alternative would result in the continued contamination of the groundwater.

Alternative S-3: *In-Situ* Remediation (SVE) and Hot-Spot Excavation with Off-Site Treatment and/or Disposal
Estimated Capital Cost: $410,000
Estimated Annual O&M Cost: $0
Estimated Present Worth: $410,000
Estimated Construction Time Frame: 1 year
Estimated Time to Achieve RAO: 2 years

This alternative would include *in-situ* remediation via soil vapor extraction (SVE). SVE would be used to remediate PCE in the unsaturated (vadose) zone soil. To implement SVE, a vacuum is applied to the soil through a series of wells to induce the controlled flow of air to remove VOCs from the soil. The captured vapors are then treated to applicable air standards. The estimated area of PCE-impacted soil that would be addressed, based on information provided in the RI Report and the April 2006 Focused Field Sampling, would be 195 square feet.

A hot-spot excavation would occur in parallel with the SVE system to remove approximately 20 cubic yards of PCE-contaminated soil in a parking area at 21 Maple Avenue.

The excavated soils would be transported off site for treatment, as needed, and disposed of in accordance with federal and state regulations. Upon completion of contaminated soil removal, the excavation would be backfilled and compacted, and the surface would be restored. Both the SVE and excavation would remove contaminated soil and meet the remediation goal of 1 mg/kg, and post-excavation sampling would confirm that the criterion has been met.

Because this alternative would be expected to achieve the remediation goal and would not leave hazardous substances, pollutants or contaminants at the site above levels that would not allow for unlimited use and unrestricted exposure, a five-year review would not be required.

Alternative S-4: Excavation with Off-Site Treatment and/or Disposal with SVE

Estimated Capital Cost: $320,000
Estimated Annual O&M Cost: $0
Estimated Present Worth: $320,000
Estimated Construction Time Frame: 3 to 6 months
Estimated Time to Achieve RAO: 6 months

In this alternative, PCE-contaminated soils would be excavated. The estimated volume of impacted soil, based on information in the RI report, is approximately 40 cubic yards, excluding contamination that may be located beneath the 2 Wall Street building.

The excavated soils would be transported off site for treatment, as needed, and disposed of in accordance with federal and state regulations. Upon completion of contaminated soil removal, the excavation would be backfilled and compacted, and the surface would be restored. Excavation would remove contaminated soil and meet the remediation goal of 1 mg/kg, and post-excavation sampling would confirm that the criterion has been met.

If physical removal is not feasible for the soil under the 2 Wall Street building, an SVE system may be utilized to address the remaining soil contamination. The capital costs for this alternative reflect the use of an SVE system.

Because this alternative would be expected to achieve the remediation goal and not leave hazardous substances, pollutants or contaminants remaining at the site above levels that would not allow for unlimited use and unrestricted exposure, a five-year review would not be required.

COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting the remedies, EPA considered the factors set out in CERCLA Section 121, 42 U.S.C. § 9621, by conducting a detailed analysis of the viable remedial alternatives pursuant to the NCP, 40 CFR § 300.430(e)(9) and OSWER Directive 9355.3-01. The detailed analysis consisted of an assessment of the individual alternatives against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

Threshold Criteria *- The first two criteria are known as "threshold criteria" because they are the minimum requirements that each response measure must meet in order to be eligible for selection as a remedy.*

1. **Overall Protection of Human Health and the Environment** *Overall protection of human health and the environment addresses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.*

Alternatives S-1 and S-2 would provide protection of human health since there is no unacceptable human health risk associated with the soil. However, they would not be protective of the environment since the contamination would continue to migrate into the groundwater. Alternatives S-3 and S-4 would provide protection of human health and the environment by eliminating, reducing, or controlling risk through the removal and/or treatment of contaminated material. Alternatives S-3 and S-4 would achieve the remediation goal at the completion of the excavation and/or treatment.

Because the "no action" alternative (S-1) and the "limited action" alternative (S-2) are not protective of the environment, they were eliminated from consideration under the remaining eight criteria.

2. **Compliance with applicable or relevant and appropriate requirements (ARARs)**

Section 121(d) of CERCLA, 42 U.S.C. § 9621(d), and 40 CFR §300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate federal laws and state environmental or facility siting laws, collectively referred to as "ARARs", unless such ARARs are waived under CERCLA Section 121(d)(4).

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those state standards that are identified in a

timely manner and are more stringent than federal requirements may be relevant and appropriate.

Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes or provides a basis for invoking a waiver.

Actions taken at any Superfund site must meet all ARARs or provide grounds for invoking a waiver of these requirements. These include chemical-specific, location-specific, and action-specific ARARs. There are no chemical-specific ARARs for soil. The New Jersey Impact to Groundwater Soil Criteria are not promulgated regulations, so they are not ARARs but TBCs. However, EPA has identified the Impact to Groundwater Soil Cleanup Criterion for PCE of 1 mg/kg as a remediation goal. Alternatives S-3 and S-4 would meet EPA's PCE remediation goal for the contaminated soils.

Location-specific ARARs would not be triggered for any of the alternatives. However, should the remediation area expand to the former Morris Canal, National Register of Historical Places requirements would be triggered.

Alternatives S-3 and S-4 would attain action-specific ARARs for the contaminated soils, which would include RCRA transportation and disposal requirements.

Primary Balancing Criteria *- The next five criteria are known as "primary balancing criteria". These criteria are factors with which tradeoffs between response measures are assessed so that the best option will be chosen, given site-specific data and conditions.*

3. **Long-term Effectiveness and Permanence**

Long-term effectiveness and permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

Alternatives S-3 and S-4 both permanently remediate the ongoing source of groundwater contamination. Alternative

S-3 uses limited excavation and *in-situ* treatment to reduce contaminant mass in the vadose zone. Alternative S-4 uses excavation to remove the contaminant mass from the WS/EM Source Area with the contingency to use *in-situ* treatment should physical removal be infeasible.
Alternatives S-3 and S-4 are both permanent remedies and effective in the long-term.

4. **Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment**

Reduction of toxicity, mobility, or volume through treatment refers to a remedial technology's expected ability to reduce the toxicity, mobility, or volume of hazardous substances, pollutants or contaminants at the site.

Alternative S-3 would reduce contaminant toxicity, mobility, and volume through removal and treatment of PCE. PCE would be adsorbed onto granular activated carbon (GAC) and treated at an off-site facility. Alternative S-4 would reduce the mobility of contamination through removal of contaminated soil and disposal at an off-site facility. If treated, the toxicity and volume of contamination would also be reduced.

5. **Short-term Effectiveness**

Short-term effectiveness addresses short-term risks to the community, workers and the environment during the construction and implementation of the remedial alternatives, and the effectiveness and reliability of protective and mitigative measures.

Alternative S-3 would present short-term risks to the community relating to potential inhalation exposure, but those risks would be mitigated by engineering controls and air monitoring. Risks relating to potential inhalation exposure by workers would be mitigated by air monitoring and a health and safety program.

Alternative S-4 would present short-term risks to the community relating to excavation and handling of contaminated soil. This potential exposure would be mitigated with the use of dust suppression, restricted site access, and air monitoring. Risks relating to potential inhalation exposure by workers would be mitigated by dust suppression, a health and safety program, and air monitoring.

6. **Implementability**

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are considered.

Alternative S-3 (and possibly Alternative S-4 if the SVE is needed) would be somewhat difficult to implement because of limited available space to install a treatment building. Coordination with state and local governments in addition to property owners and their tenants would be required for placement of soil vapor extraction wells and associated treatment equipment.

Alternative S-4 would be easily implemented using conventional construction equipment and materials; however, some specialized techniques may be required for excavation in close proximity to buildings and would require coordination with state and local governments in addition to property owners and tenants. This alternative could also potentially impact business operations since the excavation would occur near buildings as well. Also it will be necessary to close a portion of a municipal parking lot during excavation work.

7. **Cost**

Includes estimated capital and operation and maintenance costs, and net present-worth values.

The estimated present worth costs of the Alternatives are:

Alternative S-3 (*In-situ* Treatment and Hot Spot Excavation): the estimated capital costs plus the operating costs needed until remediation goal is achieved are $410,000.

Alternative S-4 (Excavation with Off-Site Treatment and/or Disposal and SVE): the estimated capital costs and potential operating costs if SVE treatment is needed are $320,000.

Modifying Criteria *- The final two evaluating criteria, criteria 8 and 9, are called "modifying criteria" because new information or comments from the state or the community on the Proposed Plan may lead to modification of the*

preferred response measure or cause another response measure to be considered.

8. **State Acceptance**

State acceptance indicates whether, based on its review of the RI/FS reports and the Proposed Plan, the state supports, opposes, and/or has identified any reservations with the selected response measure.

The State of New Jersey concurred with the Selected Remedy on September 27, 2006. A copy of the state's concurrence letter is included in Appendix V.

9. **Community Acceptance**

Community acceptance summarizes the public's general response to the response measures described in the Proposed Plan and the RI/FS reports. This assessment includes determining which of the response measures the community supports, opposes, and/or has reservations about.

EPA solicited input from the community on the remedial alternatives proposed for the WS/EM Source Area of the Rockaway Borough Wellfield Site. The community was generally supportive of EPA's Proposed Plan. Appendix III, The Responsiveness Summary, addresses the comments received at the public meeting.

PRINCIPAL THREAT WASTE

EPA's findings to date indicate the presence of "principal threat" waste at the WS/EM Source Area. Principal threat wastes are considered source area materials, i.e., materials that include or contain hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to groundwater, surface water, or as a source for direct exposure.

Contaminated groundwater is generally not considered to be a "principal threat". However, the contaminated soil in the WS/EM Source Area associated with this Record of Decision is considered to be a "principal threat" to the groundwater. The OU3 remedy will address this "principal threat" via excavation and, if necessary, SVE treatment of the contaminated soil, which acts as a source for groundwater contamination.

SELECTED REMEDY

Based upon consideration of the Site investigation results, the requirements of CERCLA, the detailed analysis of the response measures, and public comments, EPA has determined that Alternative S4 is the appropriate remedy for OU3 of the Site, because it best satisfies the requirements of CERCLA Section 121 and the NCP's nine evaluation criteria for remedial alternatives, 40 CFR § 300.430(e)(9).

The major components of the Selected Remedy include:

- Excavation of an estimated 40 cubic yards of soil contaminated with volatile organic compounds;
- Off-site treatment and/or disposal; and
- Soil Vapor Extraction (SVE), if necessary to augment the soil excavation.

The estimated present worth cost of the Selected Remedy - Alternative S4 is $320,000.

The selection of Alternative S4 is believed to provide the best balance of trade-offs among the alternatives with respect to the evaluation criteria. EPA and NJDEP believe that the Selected Remedy will be protective of human health and the environment, comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, is cost effective, and will utilize permanent solutions and treatment technologies to the maximum extent practicable.

STATUTORY DETERMINATIONS

As previously noted, CERCLA Section 121(b)(1) mandates that a remedial action must be protective of human health and the environment, cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. CERCLA Section 121(b)(1) also establishes a preference for remedial actions that employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site. CERCLA Section 121(d) further specifies that a remedial action must attain a degree of

cleanup that satisfies ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA Section 121(d)(4). For the reasons discussed below, EPA has determined that the Selected Remedy meets the requirements of CERCLA Section 121.

Protection of Human Health and the Environment

The Selected Remedy for the WS/EM Source Area will adequately protect human health and the environment through excavation and/or off-site treatment or disposal. Excavation, with possible SVE, of the contaminated soil to the remediation goal of 1 mg/kg PCE will prevent the contaminants from continuing to adversely impact the groundwater, which is being drawn into the Rockaway Borough Wellfield.

Compliance with ARARs

The action-specific criteria, location-specific criteria, and chemical-specific criteria are shown in Appendix II, Table 7. At the completion of the response action, the Selected Remedy will meet the identified ARARs.

Cost-Effectiveness

In EPA's judgment, the Selected Remedy is cost-effective and represents reasonable value for the money to be spent. Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility and volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness. The overall effectiveness of the Selected Remedy has been determined to be proportional to the costs, and the Selected Remedy, therefore, represents reasonable value for the money to be spent. The estimated present worth cost of Alternative S4 is $320,000.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

EPA has determined that the Selected Remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practical manner for OU3. EPA has determined that the Selected Remedy provides the

best balance of trade-offs with respect to the five balancing criteria.

The Selected Remedy satisfies the criteria for long-term effectiveness and permanence by removing the VOC contamination from the soil. The selected alternative presents a higher short-term risk different from the other alternatives because of the greater potential for exposure associated with the excavation and transportation of a greater quantity of contaminated soils. However, these short-term risks will be mitigated through implementation of measures such as engineering controls, use of personal protective equipment, safe work practices and permimeter air monitoring. The Selected Remedy is implementable since it employs standard technologies that are readily available.

Preference for Treatment as a Principal Element

Based on sampling performed to date, the contaminated soil may not require treatment to meet the requirements of off-site disposal facilities. Therefore, the Selected Remedy may not meet the statutory preference for the use of remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

Five Year Review Requirement

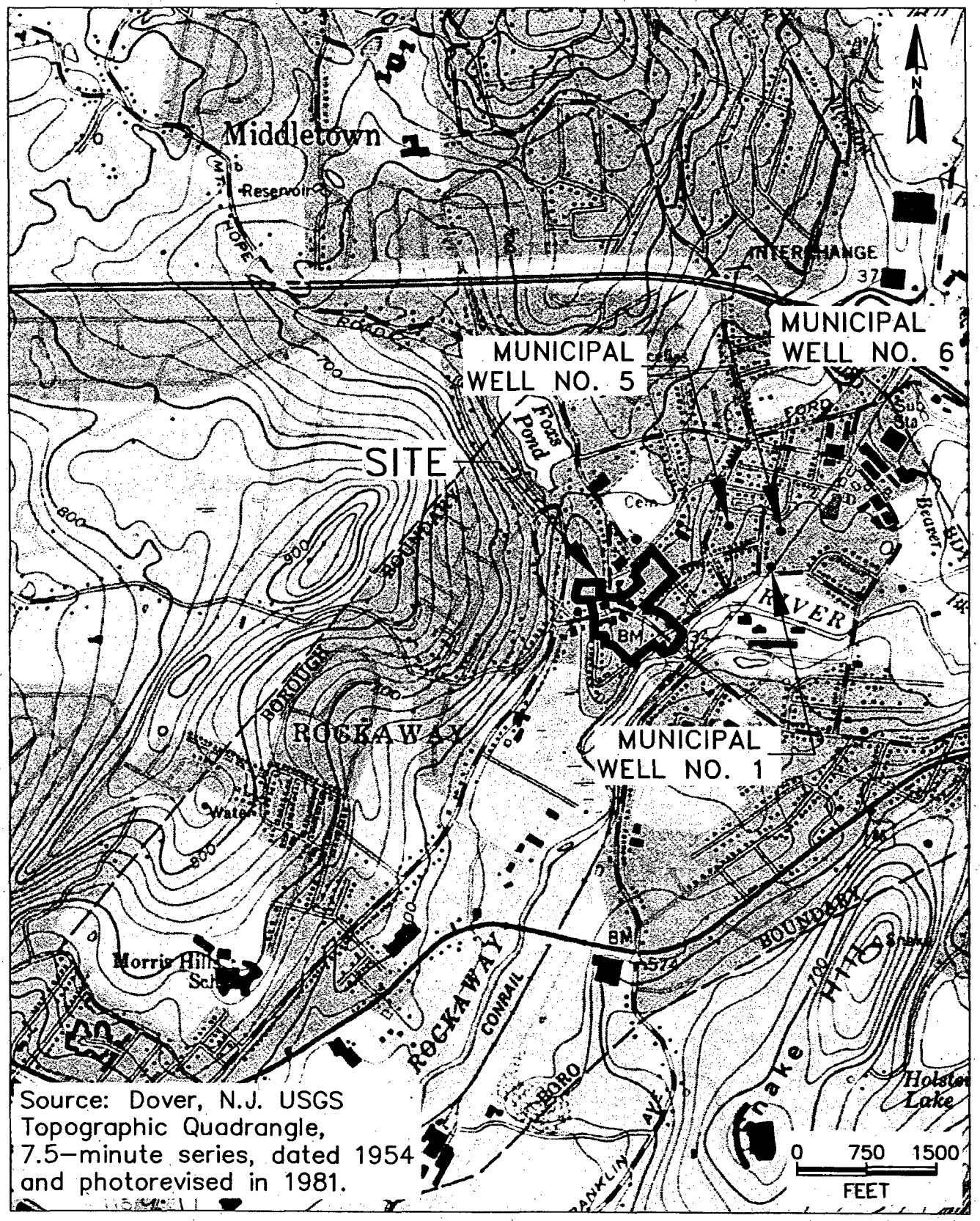
Because the selected remedy will not result in hazardous substances, pollutants, or contaminants remaining above levels that allow for unlimited use and unrestricted exposure, a five-year review will not be required.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the WS/EM Source Area was released to the public on August 11, 2006. The Proposed Plan identified the preferred alternative for WS/EM Source Area, OU3 of the Site. EPA and NJDEP reviewed all comments received during the 30-day public comment period. Upon review of these comments, EPA and NJDEP determined that no significant changes to the selected remedy as originally identified in the Proposed Plan were necessary.

APPENDIX I

FIGURES



Source: Dover, N.J. USGS Topographic Quadrangle, 7.5-minute series, dated 1954 and photorevised in 1981.

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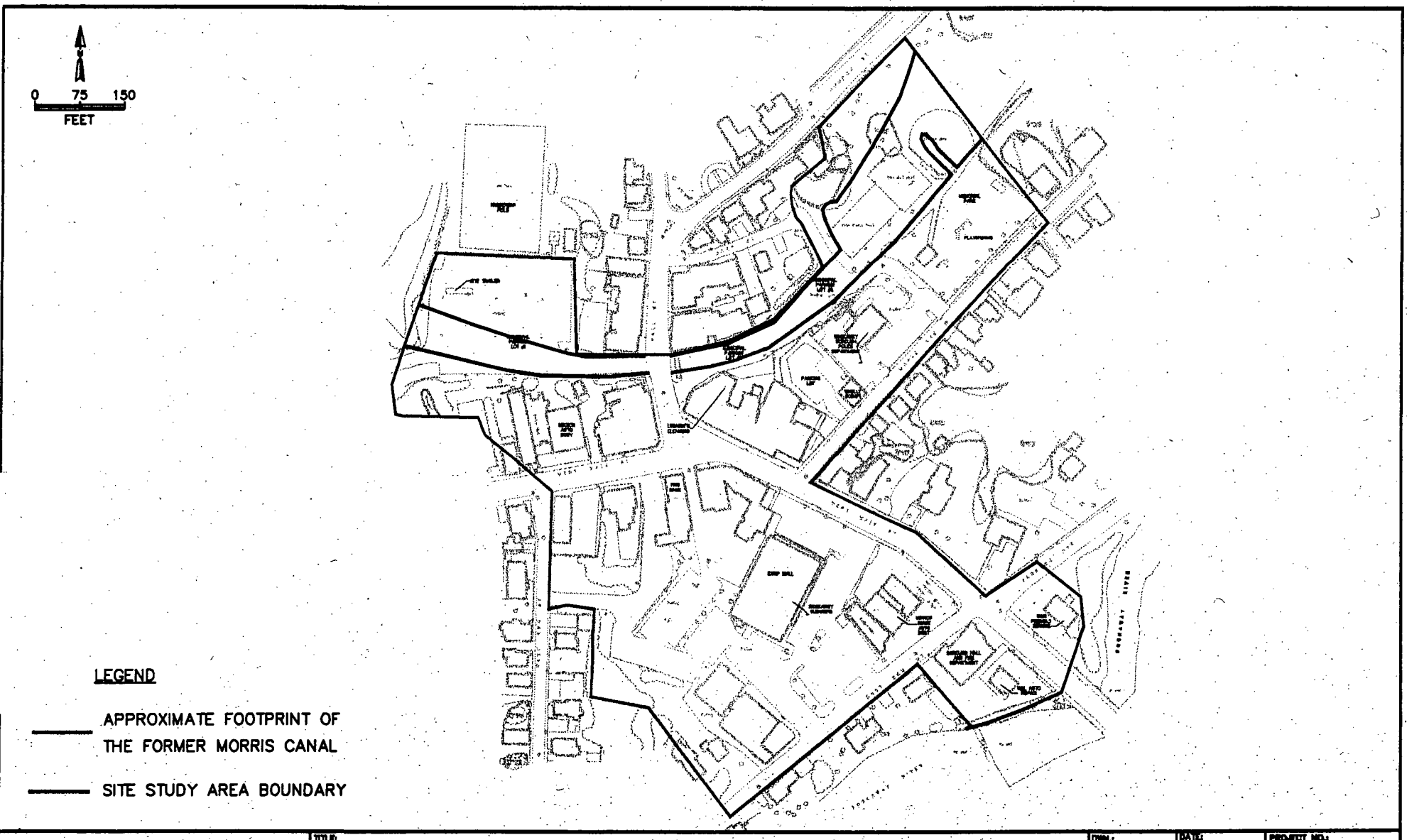
		DATE: 9/20/06	REV.: 0	

500037



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TETRA TECH EC, INC.

TITLE:
STUDY AREA
RECORD OF DECISION
ROCKAWAY BOROUGH WELLFIELD RI/FS – WALL STREET/EAST MAIN STREET SITE

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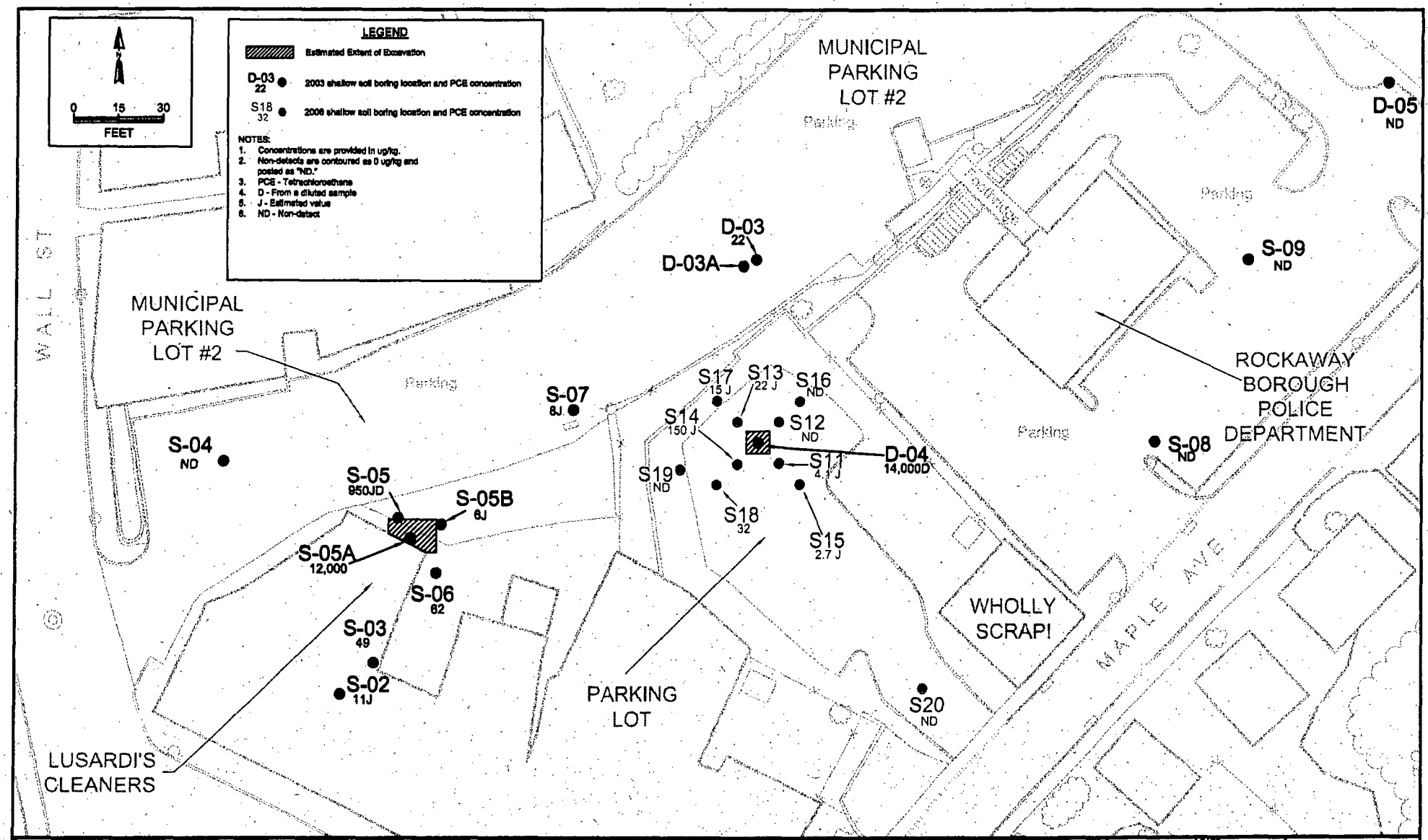
CHKD.: BS	REV.: 0	FIGURE NO.: 2	
DES.: CTS	APPD.: LH		



TETRA TECH EC, INC.

TITLE:
CONCEPTUAL EXCAVATION AREA
RECORD OF DECISION
ROCKAWAY BOROUGH WELLFIELD SUPERFUND SITE RI/FS

DWN.: LMB	DATE: 9/20/2006	PROJECT NO.:	
CHKD: LHH	REV.: 0		
DES.: EEP	APPD: LHH	FIGURE NO.: 3	

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APPENDIX II

TABLES

TABLE 1

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Lusardi's Backyard Surface Soil

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Surface soil	Tetrachloroethene	0.005	12	mg/kg	6/7	12	mg/kg	Max.

Max = Maximum value detected

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Lusardi's Backyard All Soil

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Surface soil	Tetrachloroethene	0.001	12	mg/kg	14/20	6.62	mg/kg	99% Cheb.

99% Cheb. = 99% Chebyshev (mean, STD) Upper-confidence limit

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Former Foundry Property Surface Soil

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Surface soil	Tetrachloroethene	14	14	mg/kg	1/4	14	mg/kg	Max.

Max = Maximum value detected

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Former Foundry Property All Soil

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Surface soil	Tetrachloroethene	0.004	14	mg/kg	2/10	14	mg/kg	Max.

Max = Maximum value detected

TABLE 2

Selection of Exposure Pathways

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Onsite/ Offsite	Rationale for Selection/Exclusion of Exposure Pathway
Current/Future	Soil	Lusardi's Basement Surface Soil	Lusardi's Basement Surface Soil	Maintenance Worker	Adult	Ingestion	Onsite	No COPCs were retained in this area, therefore these exposure pathways were not evaluated.
						Dermal	Onsite	No COPCs were retained in this area, therefore these exposure pathways were not evaluated.
						Inhalation of Particulates	Onsite	Inhalation of soil particulates from earthen floor during maintenance activities in the Lusardi's Dry Cleaners is not considered to be a significant pathway due to limited potential for ground disturbance and dust suspension in the air.
						Inhalation of Volatiles	Onsite	No volatile organic compounds were retained as COPCs in this area. Therefore, this indoor air exposure pathway was not quantitatively evaluated. Soil gas samples collected at this exposure point were screened against EPA risk-based criteria.
			Indoor Air	Dry cleaning Worker	Adult	Inhalation of Volatiles	Onsite	No volatile organic compounds were retained as COPCs in this area. Therefore, this indoor air exposure pathway was not quantitatively evaluated. Soil gas samples collected at this exposure point were screened against EPA risk-based criteria.
				Recreational User (Gym)	Adult	Inhalation of Volatiles	Onsite	A recreational user works out in the gym on the second floor of Lusardi's Dry- Cleaning. Since no volatile organic compounds were retained as COPCs in the area, this indoor air exposure pathway was not quantitatively evaluated. Soil gas samples collected at this exposure point were screened against EPA risk-based criteria.
				Dry cleaning Customer	Adult	Inhalation of Volatiles	Onsite	No quantitative analysis was performed for a dry- Cleaning customer since the dry- Cleaning worker would have greater potential exposure to volatile contaminants than the dry-Cleaning customer.
		Lusardi's Backyard Soil	Lusardi's Backyard Surface Soil	Dry cleaning Worker	Adult	Ingestion	Onsite	Direct exposure through contact with outdoor surface soil during breaks taken near the Lusardi's Dry Cleaners during the work day was evaluated.

						Dermal	Onsite	Direct exposure through contact with outdoor surface soil during breaks taken near the Lusardi's Dry Cleaners during the work day was evaluated.
						Inhalation of Particulates	Onsite	Inhalation of soil particles entrained into the ambient air by wind during breaks taken near the Lusardi's Dry Cleaners during the work day was evaluated.
						Inhalation of Volatiles	Onsite	Inhalation of volatile organic compounds released from the soil into the outdoor air during breaks taken near the Lusardi's Dry Cleaners during the work day was evaluated.
				Dry cleaning Customer	Adult	Ingestion	Onsite	No quantitative analysis was performed for a dry cleaning customer since the dry cleaning worker would have greater potential exposure to soil contaminants than the dry cleaning customer.
						Dermal	Onsite	
						Inhalation of Particulates	Onsite	
						Inhalation of Volatiles	Onsite	
		Memorial Park Surface Soil	Memorial Park Surface Soil	Park User	Adult	Ingestion	Onsite	No COPCs were retained in this area, therefore these exposure pathways were not evaluated.
						Dermal	Onsite	
						Inhalation of Particulates	Onsite	
						Inhalation of Volatiles	Onsite	
					Child (0-6)	Ingestion	Onsite	No COPCs were retained in this area, therefore these exposure pathways were not evaluated.
						Dermal	Onsite	
						Inhalation of Particulates	Onsite	
						Inhalation of Volatiles	Onsite	
					Groundskeeper	Ingestion	Onsite	No COPCs were retained in this area, therefore these exposure pathways were not evaluated.
						Dermal	Onsite	
						Inhalation of Particulates	Onsite	

						Inhalation of Volatiles	Onsite	
		Former Foundry Property (All Soils)	Indoor Air	Commercial Worker	Adult	Inhalation of Volatiles	Onsite	Inhalation of volatile organic compounds released from the soil into the first floor indoor air of nearby businesses (i.e., Police Station, hairdressers, and scrapbook shop) was qualitatively evaluated using the results form the residential assessment.
				Resident	Adult	Inhalation of Volatiles	Onsite	The inhalation of volatile organic compounds emitted from the soil into the indoor air of the second floor of the residential apartments above nearby businesses was qualitatively evaluated by comparing the results of the soil gas survey with EPA risk-based screening criteria for shallow and deep soil gas, assuming residential exposure.
					Child (0-6)	Inhalation of Volatiles	Onsite	
Future	Soil	Lusardi's Backyard All Soil (surface and subsurface)	Lusardi's Backyard All Soil	Construction Worker	Adult	Ingestion	Onsite	Direct exposure through contact with the surface and subsurface soil that may be disturbed and exposed during future excavation activities at Lusardi's Property was evaluated.
						Dermal	Onsite	
						Inhalation of Particulates	Onsite	Inhalation of soil particles entrained into the ambient air by future excavation and construction activity at the Lusardi's Property was evaluated.
						Inhalation of Volatiles	Onsite	Inhalation of volatile organics released from the surface and subsurface soil into the ambient air during future excavation and construction activities at the Lusardi's Property was evaluated.
		Memorial Park All Soil (surface and subsurface)	Memorial Park All Soil	Construction Worker	Adult	Ingestion	Onsite	No COPCs were retained in this area, therefore these exposure pathways were not evaluated.
						Dermal	Onsite	
						Inhalation of Particulates	Onsite	
						Inhalation of Volatiles	Onsite	
		Former Foundry Property All Soil (surface and subsurface)	Former Foundry Property All Soil	Construction Worker	Adult	Ingestion	Onsite	Direct exposure through contact with the surface and subsurface soil that may be disturbed and exposed during future construction activities at the former foundry property was evaluated.
						Dermal	Onsite	
						Inhalation of Particulates	Onsite	Inhalation of soil particulates entrained into the ambient air by future excavation and construction activity at the former foundry property was evaluated.

					Inhalation of Volatiles	Onsite	Inhalation of volatile organic compounds released from the surface and subsurface soil into the ambient air during future excavation and construction activities at the former foundry was evaluated.

Summary of Selection of Exposure Pathways

The table describes the exposure pathways associated with the soil that were evaluated for the risk assessment, and the rationale for the inclusion of each pathway. Exposure media, exposure points, and characteristics of receptor populations are included.

TABLE 3

Non-Cancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)	Adjusted RfD (Dermal)	Adj. Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates of RfD:
Tetrachloroethene	Chronic	1.0E-2	$(mg/kg\text{-}day)^{-1}$	NA	1.0 E-2	$(mg/kg\text{-}day)^{-1}$	Liver	1000	IRIS	04/19/04

Pathway: Inhalation

Chemical of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Inhalation RfD	Inhalation RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates:
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA

Key

NA: No information available
IRIS: Integrated Risk Information System, U.S. EPA

Summary of Toxicity Assessment

This table provides non-carcinogenic risk information which is relevant to the contaminants of concern in soil. When available, the chronic toxicity data have been used to develop oral reference doses (RfDs) and inhalation reference doses (RfDi).

TABLE 4

Cancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Tetrachloroethene	5.40E-1	$(mg/kg/day)^{-1}$	5.4E-1	$(mg/kg/day)^{-1}$	---	CalEPA	06/03/04

Pathway: Inhalation

Chemical of Concern	Unit Risk	Units	Inhalation Slope Factor	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Tetrachloroethene	6.0E-3	$(mg/m^3)^{-1}$	2.1E-2	$(mg/kg\text{-}day)^{-1}$	---	CalEPA	06/03/04

Key

NA: No information available
CalEPA: California EPA

Summary of Toxicity Assessment

This table provides carcinogenic risk information which is relevant to the contaminants of concern in soil. Toxicity data are provided for both the oral and inhalation routes of exposure.

TABLE 5

Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Current/Future
Receptor Population: Drycleaning worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Lusardi's Backyard Surface Soil	Lusardi's Backyard Surface Soil	Tetrachloroethene	Liver	5.87E-4	----	----	5.87E-04
							Groundwater Hazard Index Total =	0.00059

Summary of Risk Characterization - Non-Carcinogens

The table presents hazard quotients (HQs) for each route of exposure and the hazard index (sum of hazard quotients) for all routes of exposure. The Risk Assessment Guidance for Superfund states that, generally, a hazard index (HI) greater than 1 indicates the potential for adverse non-cancer effects.

TABLE 6

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Current/Future
Receptor Population: Drycleaning worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Lusardi's Backyard Surface Soil	Lusardi's Backyard Surface Soil	Tetrachloroethene	1.13E-6	6.63E-6	----	7.761E-6
						Total Risk =	7.76E-6

Summary of Risk Characterization - Carcinogens

The table presents cancer risks (CRs) for each route of exposure and for all routes of exposure combined. The Risk Assessment Guidance for Superfund states that, generally, the acceptable cancer risk range is 10^{-4} to 10^{-6}.

TABLE 7

Selected Standards
Rockaway Borough Wellfield Site, Soil (OU-3)

Standard, Requirement, Criterion, or Limitation	Citation or Reference	Type	Description	Status	Comments
FEDERAL					
Resource Conservation and Recovery Act (RCRA) - Groundwater Protection Standards	40 CFR 264.94	Chemical specific	Maximum contaminant concentrations for groundwater protection at hazardous waste management facilities	Relevant and Appropriate	Potential ARAR for groundwater cleanup and replacement standard.
Resource Conservation and Recovery Act (RCRA) - Groundwater Protection Standards	40 CFR 264.18	Location specific	Regulates the design, construction, operation and maintenance of hazardous waste management facilities within the 100-year floodplain.	Relevant and Appropriate	Potential ARAR for on-site treatment, storage, or disposal of hazardous waste.
Hazardous Waste Generation	40 CFR 262	Action specific	Specifies requirements for hazardous waste packaging, labeling, manifesting, and storage.	Applicable	Applicable for on-site storage of hazardous waste.
Transportation of Hazardous Waste	40 CFR 263	Action specific	Specifies requirements for transporters of hazardous waste to obtain an EPA identification number, comply with manifest procedures, and spill response.	Applicable	Applicable for the use of transporters for off-site disposal of hazardous waste.
Treatment Storage, and Disposal of Hazardous Waste	40 CFR 264/265	Action specific	Specifies requirements for the operation of hazardous waste treatment, storage, and disposal facilities.	Applicable	Applicable for on-site hazardous waste treatment and storage and disposal activities.
Standard, Requirement, Criterion, or Limitation	**Citation or Reference**	**Type**	**Description**	**Status**	**Comments**
Land Disposal Restrictions	40 CFR 268	Action specific	Sets out prohibitions and establishes standards for the land disposal of hazardous waste.	Applicable	Applicable for on-site hazardous waste disposal activities.

Nation Ambient Air Quality Standards -Particulates	40 CFR 50	Action specific	Establishes maximum concentrations for particulates and fugitive dust emissions.	Applicable	Applicable for on-site activities which would generate particulate emissions.
United States Department of Transportation (USDOT) Hazardous Materials Transportation Regulations	49 CFR 171-180	Action specific	Establishes classification, packaging, and labeling requirements for shipments of hazardous materials.	Applicable	Applicable for the preparation and off-site shipment of hazardous materials generated on-site.
EPA Test Methods for Evaluation of Solid Waste	SW-846	Action specific	Establishes primary and secondary NAAQS under Section 109 of the Clean Air Act.	Applicable	Applicable to alternatives that may emit to the air.

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Standard, Requirement, Criterion, or Limitation	Citation or Reference	Type	Description	Status	Comments
Soil Cleanup Criteria	State Guidance	Chemical specific	Identified restricted (non-residential) and unrestricted (residential) soil cleanup guidelines, as well as guidelines for protection of groundwater.	Relevant and Appropriate	Potential TBC for contaminants in on-site soils.
Hazardous Waste Management Regulations	NJAC 7:26G	Action specific	Provides requirements for the generation, accumulation, on-site management, and transportation of hazardous wastes.	Relevant and Appropriate	Potential ARAR for on-site management and disposal of hazardous waste.
Air Quality Regulations	NJAC 7:27	Action specific	Provides requirements applicable to air pollution sources.	Relevant and Appropriate	Potential ARAR for the generation and emission of air pollutants.
Industrial Site Recovery Act	NJSA 13:1K	Action specific	Requires soil remediation standards for human carcinogens in excess of established standards.	Relevant and Appropriate	Potential ARAR for setting soil remediation criteria where NJDEP standards are more stringent.
Soil Erosion and Sediment Control	NJSA 4:24	Action specific	Requires the implementation of soil erosion and sediment control measures for activities disturbing more than 5,000 square feet of surface area of land.	Relevant and Appropriate	Potential ARAR for site activities involving excavation, grading, or other soil disturbance activities.

APPENDIX III

RESPONSIVENESS SUMMARY

RESPONSIVENESS SUMMARY
ROCKAWAY BOROUGH WELLFIELD SUPERFUND SITE
ROCKAWAY, MORRIS COUNTY, NEW JERSEY

This Responsiveness Summary summarizes the public's comments and concerns regarding the Proposed Plan and preferred cleanup alternatives to address contamination at the Rockaway Borough Wellfield Superfund Site (the Site). This summary also presents the U.S. Environmental Protection Agency's (EPA's) responses to the public's comments and concerns. At the time of the public comment period, August 11, 2006 to September 11, 2006, EPA proposed a preferred alternative for remediating soil at the Site. Subsequently, EPA has considered all comments received and summarized them in this document. Based on the consideration of all comments, EPA has developed a final decision for the selection of a remedial alternative for the Site.

This Responsiveness Summary is divided into the following sections:

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS: This section provides the history of the community involvement and interests regarding the Rockaway Borough Wellfield Superfund Site.

II. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS, AND RESPONSES: This section contains summaries of oral comments received by EPA at the public meeting. EPA did not receive any written comments on the Proposed Plan during the public comment period.

III. ATTACHMENTS: The last section of this Responsiveness Summary provides attachments that document public participation in the remedy-selection process for this Site including:

Attachment A: the Proposed Plan that was distributed to the public for review and comment;

Attachment B: the public notice that appeared in the *The Daily Record* and *The Citizen;*

Attachment C: the EPA Press Release announcing EPA to Remove Contaminated Soil from the Rockaway Borough Wellfield Site; and

Attachment D: the meeting agenda and transcript of the public meeting.

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

- On August 23, 2006, EPA held a public meeting to present the preferred remedial alternative for the Wall Street/East Main Street Area (WS/EM), OU3, at the Rockaway Borough Community Center, Rockaway, New Jersey. Previously,

EPA has held numerous meetings with local officials to update them on the status of the Site. In addition, EPA meets annually at the Site with Congressman Rodney Frelinhuysen and local and state officials to discuss the Site. Although interest in the Site by local residents has been generally low, EPA has provided the community with fact sheets and has scheduled public information sessions on the Site. Additionally, EPA has had public outreach during the residential indoor air sampling events.

II. SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES

During the August 23, 2006 public meeting, comments from the public touched upon a number of topics of concern to stakeholders including: methods considered for use in remediation of the WS/EM Area; the quality of local drinking water; EPA communication with stakeholders; schedule for remediation activities; road closings; site security; long-term EPA oversight; the plume; identification of the PRP; source of funds for remediation; impact of the local Superfund sites on property values; and prevention of further contamination. A summary of the comments received during the August 23, 2006 public meeting and EPA's responses follows.

Methods considered for use in remediation of the WS/EM Area

1. Comment: A stakeholder asked if EPA had considered use of Ultraviolet (UV) light as a mechanism to destroy chlorinated hydrocarbons at the WS/EM Area. He suggested that if successful, this would be a highly economical method for breaking down chlorinated compounds.

   EPA Response: UV oxidation is a treatment process that oxidizes organic compounds by the addition of strong oxidizers and irradiation with UV light. Wide varieties of organic contaminants are susceptible to destruction by UV oxidation, including chlorinated hydrocarbons, such as PCE, which is the contaminant of concern at this Site. However, this technology has only been demonstrated/applied for treatment of water streams and air streams. The application of this technology for the in-situ or ex-situ treatment of contaminated soil, which is the objective of the selected remedy, has not been demonstrated.

2. Comment: One resident asked EPA what type of air monitoring will be used during remediation and what types of protections are in place to prevent exposure of stakeholders to high volumes of vapor during remediation activities? Will random monitoring take place throughout the community?

   EPA Response: The preferred remedy consists of a controlled excavation of contaminated soils for the WS/EM Area. The remedial design will develop air

monitoring requirements to ensure that no contaminants are released from the Site above levels that could cause a health concern.

Quality of local drinking water

3. Comment: A resident expressed concern that local residents had been possibly drinking contaminated water for a long time.

   EPA Response: It is a misconception that the citizens of Rockaway Borough are drinking contaminated water. In fact, the drinking water is doubly treated. Carbon treatment of the water was initially installed in 1981 and in 1993 an air stripper was added to enhance the treatment of the water. EPA is currently addressing how to prevent the contaminated groundwater from getting into the drinking water system. This is being done in two ways. First, the potentially responsible parties (PRSs) have constructed a groundwater pump and treat system to contain and remediate the contaminated groundwater plume emanating from the Klockner and Klockner groundwater plume area. In addition, EPA is currently preparing to install a groundwater pump and treat system to address the contaminated groundwater plume emanating from the EM/WS groundwater plume area.

EPA communication with stakeholders

4. Comment: Will EPA publish a newsletter that will keep stakeholders up-to-date with what is happening during remediation activities and will there be publicity planned for when the site is remediated?

   EPA Response: EPA periodically issues community updates. EPA will have a public information session prior to the start-up of remedial action activities and EPA can also host additional information sessions focused on specific topics or issues as necessary. Because the Rockaway Borough Wellfield Superfund Site consists of two soil and two groundwater remedial actions, a final construction completion press release will not be issued until all of the remedial actions have been completed.

Schedule for remediation activities

5. Comment: When will remediation activities begin?

   EPA Response: EPA will not have a schedule for remediation until after the remedial design has been completed, which normally takes one to two years.

6. Comment: A stakeholder asked if there is a timeline for the remediation project?

   EPA Response: As indicated above, EPA will not have a schedule for remediation until after the remedial design has been completed, however, once initiated, the remedial action activities are anticipated to take three to six months.

7. Comment: A stakeholder expressed concern because nothing has been accomplished in 15 years.

   EPA Response: EPA has accomplished a lot in the last 15 years. The second Record of Decision for the site was signed in 1991 and since that time, EPA negotiated Consent Decrees with two Potentially Responsible Parties (PRPs) to address source area and groundwater contamination at the K&K portion of the site, conduct two source area investigations, and ultimately develop a list of alternatives to remediate the WS/EM contaminated source area, which is the subject of this meeting. In addition, during this time period two groundwater extraction and treatment systems have been designed. The first of the groundwater extraction and treatment systems, for the Klockner and Klockner plume, was constructed by Alliant Techsystems, Inc. and has been in operation since January 2006. EPA is presently preparing to initiate construction of the WS/EM Area groundwater extraction and treatment system.

Road Closings

8. Comment: Will there be road closings to accommodate remediation work? How much of the parking lot will be impeded from public use and for how long?

   EPA Response: The parking lot located behind 1 Wall Street will be at least partially closed off during remediation activities and there could be some temporary road closings to allow drill rigs, backhoes, trucks, and other large equipment to be moved in and out of the remediation area. While most of the work should only be short-term, approximately three months or so for excavation, the amount of time needed will depend upon the actual design of the remedy. EPA will continue to coordinate with the Mayor and local police to assure that when activities are scheduled, they will avoid, as much as possible, adding traffic on local roads when school buses and local rush hour traffic are prevalent, etc. EPA does not anticpate nighttime activity because associated noise levels would most likely disturb local residents.

Site security

9. Comment: Will there be on-site security at the locations of remediation activity?

   EPA Response: If it is determined during planning that on-site security is necessary, then EPA will make appropriate arrangements. EPA will coordinate with local police to determine if there is a need for additional security. As normal precautions, keys will be removed from large equipment so that no one may interfere with the equipment after working hours.

Long-term EPA oversight

10. Comment: Is there a requirement for a periodic or five-year progress report on all Superfund sites?

    EPA Response: No. Five year reviews are only required if contaminants are left on-site at levels that would not allow for unlimited use and unrestricted exposure. In addition, it is EPA policy to conduct five year reviews at sites where it will take longer than five years to reach an unrestricted clean-up goal. At the Rockaway Borough site, a policy review will be conducted for the groundwater remedies because it will take longer than five years to reach drinking water standards. However, a five year review will not be needed for the WS/EM soil remedy since the cleanup will allow for unrestricted exposure.

Plume

11. Comment: A stakeholder requested a definition of a plume.

    EPA Response: A plume is any visible or measurable discharge of a contaminant from a given point of origin. In the case of the Rockaway Borough Wellfield Site, this refers to the amount of contamination in groundwater that was traced back to the specific source areas.

12. Comment: A resident asked if the contamination that is off-gassing or vaporizing is coming off of the plume?

    EPA Response: The vapor intrusion pathway that EPA is evaluating at some local residences could have come from the contaminated groundwater.

13. Comment: A stakeholder asked if the Klockner and Klockner plume was completely cleaned at this point?

    EPA Response: The groundwater treatment system has been operating since January 2006 and is still a long way from the restoration of the groundwater to New Jersey Drinking water standards. The 1991 ROD estimated that it would take 30 years to complete the groundwater cleanup.

14. Comment: A local resident asked how long the plume has been present at the Site and for how long has it been harming the drinking water?

    EPA Response: EPA responded that it was difficult to know this since some of the procedures now used for testing for contaminants did not exist prior to 1980. However, the Borough of Rockaway installed a carbon treatment system in 1981 to

treat the contaminants in the drinking water and, following an agreement with a PRP in 1993, an air stripper was installed to enhance the treatment of the water.

Identification of the PRP

15. Comment: A stakeholder asked if a PRP has been identified for the Klockner and Klockner plume and for the WS/EM Area and has there been any litigation or payment settlements? He asked the identities of the parties that settled.

    EPA Response: The responsible parties at the Klockner and Klockner plume are the owners of the property and they are investigating the soil. The tenants at the time the soil was contaminated are the ones who are cleaning up the groundwater (Alliant Techsystems, Inc.). There was never a defined responsible party for the WS/EM Area. There were a few small parties that settled, by contributing money, because they did not have the ability to fund the cleanup of WS/EM. EPA is funding this cleanup.

Source of funds for remediation

16. Comment: A stakeholder ask why cleanup responsibility is based upon a responsible party's ability to pay when there is a tax that companies pay that created the Superfund?

    EPA Response: The Superfund was a tax that was levied on corporations and industries that created or processed hazardous waste. That tax expired in the mid-1990s and therefore, the funding now comes from general tax revenues appropriated to EPA. When a site is discovered that requires the removal of contamination, EPA will first attempt to identify responsible parties and offer them an opportunity to perform the cleanup under EPA oversight. If they do not have the financial wherewithal, then EPA funds the cleanup.

17. Comment: What part of the cleanup will Rockaway Borough be responsible for paying?

    EPA Response: Rockaway Borough will not be responsible to pay for any of this cleanup.

Impact of local Superfund sites on property values

18. Comment How will the Superfund status of this site affect property values in Rockaway Borough?

    EPA Response: The Site has been on the Superfund National Priorities List since 1980 and there has been no indications that property values were adversely affected.

EPA's experience at other sites indicate that the presence of a Superfund site in a neighborhood appears to have little impact on property values.

Prevention of further contamination

19. Comment: A resident asked if measures were being taken to prevent further contamination in the area?

    EPA Response: Industries in the United States must follow strict guidelines for hazardous waste. They must document what they do with waste. They must show that they have properly handled whatever chemicals they utilize for their operations. EPA monitors industries to assure they are following the guidelines.

Other site related issues

20. Comment: A local citizen asked what kinds of properties were selected for vapor intrusion testing in basements and homes in the area of the Klockner and Klockner plume.

    EPA Response: EPA identified residences that could potentially be impacted by vapors from the two groundwater plumes based on their proximity to the groundwater plumes. EPA wrote letters to 30 local residents requesting access to sample their homes, but only received replies from 17 residents. In both the Klockner and Klockner Area and EM/WS Area, EPA initially took a representative sample from every other home. EPA evaluated the data and has since conducted follow-up sampling at some of the residents. Based on the results of the sampling, EPA will perform a more extensive study in early winter 2006.

ATTACHMENT A
PROPOSED PLAN

Superfund Program
Proposed Plan

U.S. Environmental Protection Agency
Region II

Rockaway Borough Wellfield Superfund Site

August 2006

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan identifies the Preferred Alternative for addressing soils at one of the source areas at the Rockaway Borough Wellfield Superfund Site and provides the rationale for this preference. This particular source area is known as the Wall Street/East Main Street (WS/EM) area. The U.S. Environmental Protection Agency (EPA) evaluated a number of remedial measures to address contaminated soil and as explained below, the Preferred Alternative is Excavation with Off-Site Treatment and/or Disposal with Soil Vapor Extraction.

The Proposed Plan includes summaries of all the soil cleanup alternatives evaluated for use at this site. EPA, the lead agency for site activities, issues this document. The New Jersey Department of Environmental Protection (NJDEP) is the support agency. EPA, in consultation with NJDEP, will select a final remedy for the site after reviewing and considering all information submitted during the 30-day public comment period. EPA, in consultation with NJDEP, may modify the Preferred Alternative or select another response action presented in this Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all the alternatives presented in this Proposed Plan.

EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA) and Section 300.430(f) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This Proposed Plan summarizes information that can be found in greater detail in the Operable Unit 3 (OU3) Remedial Investigation/Feasibility Study (RI/FS) reports and other site-related documents contained in the Administrative Record file for this site. EPA encourages the public to review these documents to gain a more comprehensive understanding of the Rockaway Borough Wellfield Site and the Superfund process.

Dates to remember:
MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:
August 11 – September 11, 2006

EPA will accept written comments on the Proposed Plan during the public comment period.

PUBLIC MEETING: August 23, 2006 - 7:00 pm

EPA will hold a public meeting to explain the Proposed Plan. EPA will also accept oral and written comments at the meeting. The meeting will be held at **Rockaway Borough Community Center, 21-25 Union Street, Rockaway, New Jersey.** Prior to the start of the meeting, EPA will be available from 6:00 p.m. to 7:00 p.m. to answer questions.

For more information, see the Administrative Record at the following locations:

U.S. EPA Records Center, Region II
290 Broadway, 18th Floor
New York, New York 10007-1866
(212)-637-3261
Hours: Monday-Friday – 9:00 am to 5:00 pm

Rockaway Borough Free Public Library
82 East Main Street
Rockaway, NJ 07866
(973) 627-5709
Hours: Monday & Wednesday – 12:00 to 8:00 PM
Tuesday, Thursday and Friday – 10:00 am to 8:00 pm

SITE HISTORY

The Rockaway Borough Wellfield Site is located in Rockaway Borough in Morris County, New Jersey (See Figure 1). Rockaway Borough is situated in the center of Morris County, approximately 10 miles north of Morristown and 20 miles northwest of Newark in the north-central portion of the state.

Rockaway Borough is approximately 2.1 square miles in size and is located in the central part of Morris County, New Jersey. It is bordered to the north and west by Rockaway Township and to the east and south by Denville Township. Land use in the Borough is a mix of commercial, industrial, and residential. The Rockaway Borough Wellfield Superfund Site includes three municipal water supply wells (nos. 1, 5, and 6), which are located in the eastern section of the Borough. The municipal wells range in depth from 54 to 84 feet below ground surface (bgs) and are located in a glacial aquifer. EPA designated the aquifer a sole source aquifer for the Borough and surrounding communities. The wells supply potable water to approximately 11,000 people.

In 1981, a granular carbon treatment system was installed by the Borough after contamination was discovered in the municipal water supply system. The principal contaminants found in the glacial aquifer include volatile organic compounds (VOCs), primarily tetrachloroethene (PCE) and trichloroethene (TCE). In 1993, an air stripping system was added to improve the treatment of the contaminated groundwater and reduce operating costs.

The WS/EM Area is a portion of the larger Rockaway Borough Wellfield Superfund Site. The sources of the TCE and PCE contamination include industrial operations within the Borough, including the Klockner and Klockner (K&K) facility, and a dry cleaning operation.

In 1985, the NJDEP initiated a Phase I RI/FS. The Phase I report concluded that contamination of the municipal water supply was emanating from multiple source areas within the Borough.

Based on the findings of the 1986 RI/FS, EPA initiated a Phase II RI/FS to identify the contaminant sources, further delineate the full extent of contamination and evaluate remedial action alternatives to address the sources of contamination. Some of the major findings and conclusions of Phase II RI/FS were as follows:

- Groundwater in the northeast portion of Rockaway Borough was contaminated with VOCs, primarily TCE and PCE.

- A PCE groundwater contamination plume originating in the WS/EM Area was affecting Municipal Wells No. 1 and 5. However, the source area was not identified.

- Groundwater contamination from TCE was emanating from the K&K property and impacting the Rockaway Borough Well Field, specifically Municipal Well No. 6;

The remedy selected in a September 30, 1991 Record of Decision (ROD) called for extraction and treatment of two areas of groundwater contamination referred to as the K&K and WS/EM plumes. The remedy also called for further investigations to determine the source of the PCE and TCE plumes. In 2003, EPA began an RI/FS for the WS/EM Area.

The WS/EM Area is primarily a commercial area in the heart of downtown Rockaway Borough. The RI Study Area encompassed businesses located in this area including dry cleaning, auto body repair, auto service and repair, banking, hardware, hairdressing, convenience stores, and food establishments. In addition, Borough Police and Fire Departments, Memorial Park, and municipal parking lots are located within the Study Area.

The developed portions of the WS/EM Area are covered by impervious surfaces including asphalt roadways, driveways, and parking areas; and concrete building slabs and sidewalks. A limited

number of small, fragmented areas of exposed soils comprising suburban parkland, mowed lawns, ball fields and playgrounds, and fragmented areas of forested habitats, occur in the WS/EM Area.

CURRENT STATUS

A potentially responsible party is presently performing the groundwater cleanup for the K&K plume. Construction of the groundwater extraction and treatment system has been completed and operation of the system began in January 2006.

The Remedial Design for the WS/EM Area, which was completed in February 2006, includes development of engineering drawings and specifications. Construction of the groundwater extraction and treatment system is scheduled to begin in early 2007. The United States Army Corps of Engineers, under an agreement with EPA, will be constructing the system.

The groundwater treatment system for the WS/EM Area will consist of three extraction wells, forcemains, air stripping and the discharge of treated water to the Rockaway River. The projected timeframe to restore the aquifer is 30 years.

An RI/FS is currently in progress to characterize the K&K source Area and one for the WS/EM source Area has been completed. The WS/EM Area RI/FS is the subject of this Proposed Plan.

SITE CHARACTERISTICS

There have been numerous investigations conducted at the Rockaway Borough Wellfield Superfund Site to define the nature and extent of groundwater contamination, examine potential migration routes by which contamination could reach the Borough's Wellfield, and to identify potential sources of contamination.

The following discussion relates only to the results of the source area RI/FS conducted at the WS/EM Area.

Samples were collected from surface and subsurface soil. In general, the samples were analyzed for VOCs, semivolatile organic compounds, pesticides, and metals. VOCs are the only contaminant of concern at the site. Therefore, the investigations focused on just the nature and extent of VOCs. A summary of the findings for each media sampled is presented below.

Surface Contamination

Surface soils (i.e., 0 to 1 foot below ground surface (bgs)) were collected from 17 boring locations, along with two duplicate samples (for a total of 19 soil samples). Eleven individual VOCs were detected in the surface soils; PCE was the only constituent that exceeded the NJDEP Impact to Groundwater Soil Cleanup Criteria (IGSCC). PCE was present in 10 of the 19 surface soil samples.

PCE occurred at concentrations exceeding its most conservative criteria value [the NJDEP IGSCC (1,000 micrograms per kilogram (ug/kg)] in surface soil samples. Lower concentrations of PCE were present in five other locations (i.e., detected range: 4 to 49 ug/kg). PCE was not detected in any of the three background locations. The more elevated concentrations of PCE in surface soil are present in the WS/EM Area.

Subsurface Contamination

Shallow subsurface soils (i.e., 1 to about 10 feet bgs) were collected from ten locations, while deeper subsurface soils (i.e., about 8 to 42 feet bgs) were collected from five locations. A total of 46 subsurface soil samples and two duplicate samples were analyzed.

Although 10 VOCs were detected, only PCE exceeded its most conservative criteria value (i.e., 1,000 ug/kg) in four depth interval samples from three boring locations.

WHAT ARE THE POTENTIAL "CONTAMINANTS OF CONCERN"?

PCE, benzene, methylene chloride, chromium and lead were detected at the Site above the NJDEP Impact to Groundwater Soil Cleanup Criteria. Based on validity of the analytical results, frequency of occurrence, toxicological, physical, and chemical characteristics, the Baseline Human Health Risk Assessment identified only PCE as a Contaminant of Concern.

Contaminated groundwater is generally not considered to be a "principal threat". However, the source area associated with this proposed plan is considered to be a "principal threat" to the groundwater. The OU3 remedy will address this "principal threat" via excavation of the contaminated soil, which acts as a source for groundwater contamination.

WHAT IS A "PRINCIPAL THREAT"?

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to groundwater, surface water or air, or acts as a source for direct exposure. Contaminated groundwater generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in groundwater may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element

Summary

The nature and extent of soil contamination present in the WS/EM Area was assessed through sampling of surface, shallow subsurface and deep subsurface soils. In addition, an evaluation of available historical information and the results of the geophysical and soil gas surveys were performed to assist in the determination of potential contaminant source areas.

PCE is the primary contaminant at the site, and is present at elevated concentrations in the soil (i.e., up to 14,000 ug/kg) in the surface and 730 ug/kg in the subsurface) specifically in the vicinity of Lusardi's Cleaners, the southeastern portion of Municipal Parking Lot #2, and the parking lot west of the Rockaway Borough Police Station.

SCOPE AND ROLE OF ACTION

As in many complex Superfund sites, this site has been divided into three Operable Units (OUs) or phases. OU1 was the site-wide investigation to identify the contaminants in the Borough water supply. OU2 was created when the remedy was selected to treat the groundwater plumes. This action, referred to as OU3, is intended to be the first of two source area remedial actions for the site. This Proposed Plan summarizes the remedial alternatives detailed in the Feasibility Study, and discusses the preferred alternative for addressing contaminated soil.

Human Health Risk Assessment:
A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the chemicals of concern (COCs) at the site in various media (*i.e.*, soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil. Factors relating to the exposure assessment include, but are not limited to, the concentrations that people might be exposed to and the potential frequency and duration of exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other non-cancer health effects, such as changes in the normal functions of organs within the body (*e.g.*, changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health effects.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures are evaluated based on the potential risk of developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one-in-ten-thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions explained in the Exposure Assessment. Current Superfund guidelines for acceptable exposures are an individual lifetime excess cancer risk in the range of 10^{-4} to 10^{-6} (corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk) with 10^{-6} being the point of departure. For non-cancer health effects, a "hazard index" (HI) is calculated. An HI represents the sum of the individual exposure levels compared to their corresponding reference doses. The key concept for a non-cancer HI is that a "threshold level" (measured as an HI of less than 1) exists below which non-cancer health effects are not expected to occur.

SUMMARY OF SITE RISKS

As part of the RI/FS, EPA conducted a baseline risk assessment to determine the current and future effects of the contaminants on human health and the environment. The site iscurrently used as a commercial facility, and any future use is expected to be the same. Therefore, the baseline risk assessment focused on health effects for populations typically associated with commercial facilities, site workers and future construction workers that could result from current and future direct contact with contaminated surface and subsurface soils.

Human Health Risk Assessment Findings
The carcinogenic risks and non-carcinogenic hazards for soil exposures at the WS/EM Area showed values that were within EPA's target risk range for carcinogens and below the Hazard Index (HI) of 1 for non-carcinogens (please see the box on this page for an explanation of these terms) for all populations evaluated under both current and future use scenarios. A complete discussion of the risks and hazards can be found in the Baseline Human Health Risk Assessment.

Although the risks and hazards associated with soil exposure are within or below EPA's acceptable values, the soil concentrations of PCE are above the concentrations that are associated with an adverse impact to groundwater; thus, there is a need to address the soil through a remedial action.

Ecological Risks

A Screening Level Ecological Risk Assessment (SLERA) was performed for the Area. The SLERA determined that because the majority of the observed concentrations is comparable to background or below screening level benchmark values and due to the lack of usable terrestrial habitat for ecological receptors at the WS/EM Area, risks to ecological receptors are deemed to be low. Therefore, ecologically based screening criteria are not presented and will not be utilized to assist in the interpretation of the nature and extent of soil contamination at the Area.

Remedial Action Objectives

The overall remediation goal for this area is to protect human health and the environment. The remedial action objective (RAO) has been identified to mitigate the potential risks associated with the WS/EM Area.

Soil

The RAO for the contaminated soil at the WS/EM Area is:

1. Reduce the potential for further migration of PCE from the contaminated soil into groundwater.

The Preliminary Remediation Goal for PCE in soil was identified from the New Jersey Impact to Groundwater Soil Criteria and is 1 mg/kg.

Summary of Remedial Alternatives

Based on technology screening and process option evaluation, the potential soils remedial alternatives developed for the site are as follows:

S-1: No Action
S-2: Limited Action
S-3: *In-Situ* Treatment (SVE) and Hot-Spot Excavation with Off-Site Treatment and/or Disposal
S-4: Excavation with Off-Site Disposal with SVE

Alternative S-1: No Action

Estimated Capital Cost: $0
Estimated Annual O&M Cost: $0
Estimated Present Worth: $0
Estimated Construction Time Frame: None

Regulations governing the Superfund program require that the "no action" alternative be evaluated to establish a baseline for comparison. Under this alternative, EPA would take no action at the site to prevent the migration of the contamination to the groundwater. Since this alternative results in contaminants remaining on the site above levels that would not allow for unlimited use and unrestricted exposure, a review of the site at least every five years would be required.

Alternative S-2: Limited Action

Estimated Capital Cost: $27,000
Estimated Annual O&M Cost: $0
Estimated Present Worth: $0
Estimated Construction Time Frame: None

The Limited Action Alternative would include implementation of administrative controls such as deed notices. The deed notices, or comparable administrative control, would be implemented to ensure that future activities at the WS/EM Area (e.g., excavation) would be performed with knowledge of the WS/EM Area conditions and implementation of appropriate health and safety controls. Since this alternative results in contaminants remaining on the site above levels that would not allow for unlimited use and unrestricted exposure, a review of the site at least every five years would be required.

Alternative S-3: *In-Situ* Remediation (SVE) and Hot-Spot Excavation with Off-Site Treatment and/or Disposal

Estimated Capital Cost: $410,000
Estimated Annual O&M Cost: $0
Estimated Present Worth: $410,000
Estimated Construction Time Frame: 1 year
Estimated Time to Achieve RAO: 2 years

This alternative includes *in-situ* remediation via soil vapor extraction (SVE) in an effort to address the RAO by removing PCE as a potential ongoing source of groundwater contamination. SVE would be used to remediate PCE in the unsaturated (vadose) zone soil. To implement SVE, a vacuum is applied to the soil through a series of wells to induce the controlled flow of air to remove VOCs from the soil. The captured vapors are then treated to applicable air standards. An estimated area of PCE-impacted soil, based on information provided in the RI Report and the April 2006 Focused Field Sampling, is 195 ft^2.

A hot-spot excavation will occur in parallel with the SVE system to remove approximately 20 cubic yards (yd3) of PCE-contaminated soil in a parking area southwest of the Rockaway Borough Police Station.

Excavated soils would be analyzed for disposal parameters and would be containerized for off-site disposal. The excavated soils would be trucked off-site for treatment, as needed, and disposed of in accordance with federal and state regulations. Upon completion of contaminated soil removal, the excavation would be backfilled and compacted, and the surface would be restored.

Excavation would remove contaminated soil and meet the NJDEP Impact to Groundwater criteria, and post-excavation sampling would confirm that the criteria have been met.

If during pre-design investigation sampling it is determined that soil under the Lusardi's Dry Cleaner building would need to be remediated, the SVE system may be expanded to address the remaining soil contamination.

Because this alternative is expected to achieve the cleanup goals and not leave hazardous substances, pollutants or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, a five-year review may not be required.

Alternative S-4: Excavation with Off-Site Treatment and/or Disposal with SVE

Estimated Capital Cost: $320,000
Estimated Annual O&M Cost: $0
Estimated Present Worth: $320,000
Estimated Construction Time Frame: 3-6 months
Estimated Time to Achieve RAO: 6 months

In this alternative, PCE-contaminated soils are removed via excavation. The excavated material would be transported off-site for treatment and/or disposal, at a facility designed and permitted for disposal of PCE-contaminated soil. The estimated volume of impacted soil, based on information in the RI report is approximately 40 cubic yards, excluding contamination that may be located beneath the Lusardi's Dry Cleaner building. However, additional action level exceedences could be detected during post-excavation confirmatory sampling, which could increase the scope during remedial construction.

Excavated soils would be analyzed for disposal parameters and would be containerized for off-site disposal. The excavated soils would be trucked off-site for treatment, as needed, and disposed of in accordance with federal and state regulations. Upon completion of contaminated soil removal, the excavation would be backfilled and compacted, and the surface would be restored.
Excavation would remove contaminated soil and meet the NJDEP Impact to Groundwater criteria, and post-excavation sampling would confirm that the criteria have been met.

If during pre-design investigation sampling it is determined that soil under the Lusardi's Dry Cleaner building would need to be remediated, an SVE component may be added to this alternative to address the remaining soil contamination. The capital costs for this alternative reflect the use of the SVE system.

Because this alternative is expected to achieve the cleanup goals and not leave hazardous substances, pollutants or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, a five-year review may not be required.

EVALUATION OF ALTERNATIVES

Nine criteria are used to evaluate the different remediation alternatives individually and against each other in order to select the best alternative. This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria, noting how it compares to the other options under consideration. The nine evaluation criteria are discussed below. A "Detailed Analysis of Alternatives" can be found in the Feasibility Study.

1. Overall Protection of Human Health and the Environment

Alternative S-1 would provide no protection of human health and the environment since the contamination is left on-site. Alternative S-2 would provide limited protection of human health and the environment by reducing potential risks by utilizing institutional controls. Alternatives S-3 and S-4 would provide protection of human health and the environment by eliminating, reducing, or controlling risk through the removal or treatment of contaminated material.

Because the "no action" alternative (S-1) is not protective of human health and the environment, it was eliminated from consideration under the remaining eight criteria.

2. Compliance with ARARs

Actions taken at any Superfund site must meet all Applicable or Relavent and Appropriate Requirements (ARARs) of federal and state law or provide grounds for invoking a waiver of these requirements. These include chemical-specific, location-specific, and action-specific ARARs. There are no chemical-specific ARARs for soil, only To-Be-Considered cleanup numbers (TBC). The New Jersey Impact to Groundwater Soil Criteria are TBCs. Alternatives S-3 and S-4 would meet the TBCs for the contaminated soils. Alternative S-2 would not meet the TBCs for the contaminated soils. Location-specific ARARs would not be triggered for any of the alternatives, however, should the remediation area expand to the former Morris Canal, National Register of Historical Places requirements would be triggered. Alternatives S-3 and S-4 would attain action-specific ARARs for the contaminated soils, which would include RCRA Transportation and Disposal requirements. Alternative S-2 would not attain action-specific ARARs for the contaminated soils.

3. Long-Term Effectiveness and Permanence

Of the remaining alternatives, the magnitude of residual risks is highest for Alternative S-2. Alternative S-2 relies on land use restrictions and public education programs aimed at informing the public about potential hazards posed by exposure to contaminants in the soil. Alternatives S-3 and S-4 both mitigate the ongoing source of groundwater contamination. Alternative S-3 uses limited excavation and *in-situ* treatment to reduce contaminant mass in the vadose zone. Alternative S-4 uses excavation and off-site disposal to remove contaminant mass from the Site with the contingency to use *in-situ* treatment should additional sources be located. Alternatives S-3 and S-4 are both permanent remedies and effective in the long-term.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants Through Treatment

Alternative S-2 would not reduce toxicity, volume or mobility through treatment. Alternatives S-3 and S-4 would reduce contaminant mobility through removal and disposal or regeneration of the spent granular activated carbon (GAC) and removal and disposal of soils at approved off-site facilities. Alternative S-3 (and potentially Alternative S-4 if the SVE contingency is implemented) would also reduce the volume of contaminated media by transferring contaminants from soil to GAC. For Alternatives S-3 and S-4, pre-disposal treatment, if necessary, could potentially reduce the toxicity and volume of the contaminated soils.

5. Short-Term Effectiveness

Alternative S-2 does not involve any physical treatment; there are no short-term risks to the community or workers as well as no environmental effects.

Alternative S-3 would present short-term risks to the community relating to inhalation exposure that would be mitigated by air monitoring and engineering controls. Risks relating to inhalation exposure by workers, would be mitigated by air monitoring and a health and safety program. The *in-situ* remediation is anticipated to create

minimal environmental effects since the WS/EM Area is highly developed.

Alternative S-4 would present short-term risks to the community relating to exposure to contaminated soil. This exposure will be mitigated with the use of air monitoring, dust suppression, and restricted site access. Risks relating to inhalation exposure by workers, would be mitigated by air monitoring, dust suppression, and a health and safety program. Excavation is anticipated to create minimal environmental effects since the WS/EM Area is highly developed.

6. Implementability

Alternative S-2 could be easily implemented. Coordination with state and local governments will be required for implementing institutional controls and educational programs. Coordination with state and local authorities will be required for five-year reviews.

Alternative S-3 and possibly S-4 (if the SVE is needed) would be somewhat difficult to implement because of limited available space to install a treatment building. Coordination with state and local governments in addition to property owners and tenants would be required for placement of extraction wells and associated treatment equipment.

Alternative S-4 would be easily implemented using conventional construction equipment and materials; however, some specialized techniques may be required for excavation in close proximity to building foundations and would require coordination with state and local governments in addition to property owners and tenants. This alternative would also potentially impact businesses since the excavation would occur near buildings as well as the need to close a portion of a municipal parking lot during excavation work

7. Cost

The estimated present worth costs of the Alternatives are:

Alternative S-2 (Limited Action): potential capital costs involved with the implementation of the institutional controls -$27,000 .

Alternative S-3 (*In-situ* Treatment and Hot Spot Excavation): operating costs are only needed until RAO is achieved -$410,000.

Alternative S-4 (Excavation with Off-Site Disposal and SVE): have capital costs until RAO is achieved and may have operating costs if SVE treatment is needed - $320,000.

8. State/Support Agency Acceptance

The State of New Jersey is currently evaluating EPA's Preferred Alternative in this Proposed Plan.

9. Community Acceptance

EPA will evaluate community acceptance of the Preferred Alternative after the public comment period ends. EPA will discuss community acceptance in the Record of Decision, the document that formalizes the selection of the remedy for the Area.

SUMMARY OF THE PREFERRED ALTERNATIVES

Based on the evaluation of remedial alternatives that was presented in the previous section, EPA has selected Alternative S-4 as its Preferred Alternative. This alternative involves excavation and off-site treatment and/or disposal of contaminated soils, and use of an SVE system for contamination beneath the Lusardi's Dry Cleaner building at the WS/EM Area.

The Preferred Alternative satisfies the remedial action objectives and the requirements of CERCLA, as amended, and the NCP. It will require 1-2 years of operation for the remedy to meet the cleanup criteria, which are the New Jersey Impact to Ground Water Soil Cleanup Criteria.

The Preferred Alternative provides the best balance of trade-offs among alternatives with respect to the nine CERCLA evaluation criteria. The Preferred Alternative is protective of human health and the environment, complies with ARARs and cleanup criteria, is cost-effective, and uses permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The Preferred Alternative also meets the statutory preference for the use of treatment as a principal element to the maximum extent practicable.

COMMUNITY PARTICIPATION

EPA provides information regarding the cleanup of the Rockaway Borough Wellfield Superfund Site to the public through public meetings, the Administrative Record file for the site, and announcements published in the local newspaper. EPA and the State encourage the public to gain a more comprehensive understanding of the site and the Superfund activities that has been conducted there. The front page of this Proposed Plan shows the dates for the public comment period, the date, location, and time of the public meeting, and the locations of the Administrative Record files.

EPA Region 2 has designated a point-of-contact for community concerns and questions about the Superfund program. To support this effort, the Agency has established a 24-hour, toll-free number the public can call to request information, express concerns or register complaints about Superfund. The Public Liaison Manager for EPA's Region 2 office is:

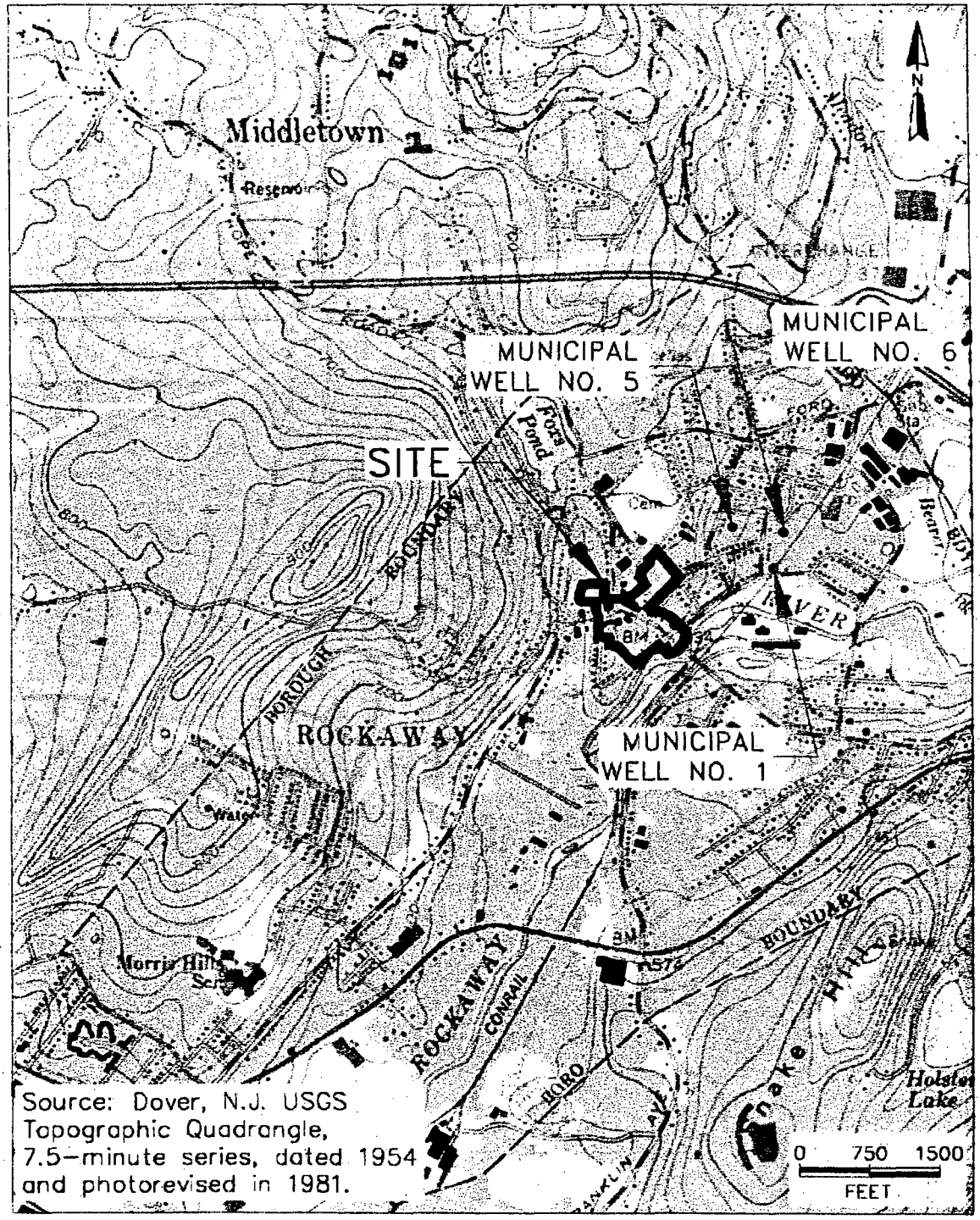
George H. Zachos
Toll-free (888) 283-7626
(732) 321-6621

U.S. EPA Region 2
2890 Woodbridge Avenue, MS-211
Edison, New Jersey 08837

For further information on the Rockaway Borough Wellfield site, please contact:

Brian Quinn Project Manager	Cecilia Echols Community Involvement Coordinator
(212) 637-4381 quinn.brian@epa.gov	(212) 637-3678 echols.cecilia@epa.gov

U.S. EPA
290 Broadway
New York, New York 10007-1866



TITLE:	DWN:	DES.:	PROJECT NO.:
SITE LOCATION MAP PROPOSED PLAN ROCKAWAY BOROUGH WELLFIELD RI/FS	CTS	CTS	
	CHKD: LH	APPD: BO	FIGURE NO.: 1
	DATE: 8/8/2006	REV.: 0	

ATTACHMENT B
PUBLIC NOTICE ANNOUNCING PROPOSED PLAN
AND COMMUNITY MEETING

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY INVITES PUBLIC COMMENT ON THE PROPOSED PLAN FOR THE ROCKAWAY BOROUGH WELLFIELD SUPERFUND SITE ROCKAWAY, MORRIS COUNTY, NEW JERSEY

The U.S. Environmental Protection Agency (EPA) announces the opening of a **30-day comment period** on the Proposed Plan and preferred cleanup alternatives to address contamination at the Rockaway Borough Wellfield site in Rockaway, New Jersey. **The comment period began on August 11, 2006 and ends on September 11, 2006. EPA will hold a public meeting on Wednesday, August 23, 2006 at 7:00PM at the Rockaway Borough Community Center, 21-25 Union Street, Rockaway, NJ 07866.** Please contact Ms. Cecilia Echols, EPA's Community Involvement Coordinator, at 212-637-3678 or 1-800-346-5009 for more information.

The site is listed on the Superfund National Priorities List. EPA recently concluded a Remedial Investigation/Feasibility Study (RI/FS) for the site to assess the nature and extent of contamination in site media and to evaluate alternatives to cleanup the site. Based upon the results of the RI/FS, EPA has prepared a Proposed Plan which describes the findings of the RI and potential cleanup alternatives detailed in the feasibility study and provides the rationale for recommending the preferred alternative.

EPA's preferred cleanup remedy for the site consists of the following components:

- Excavation and off-site disposal of Tetrachloroethylene (PCE) contaminated soils with the installation of a soil vapor extraction system (Alternative S4) at the Wall Street/East Main Street area of the Rockaway Borough Wellfield site.
- Institutional controls, monitoring, and periodic reviews would also be part of the remedy to ensure that the remedy remains protective of public health and the environment.

During the **August 23, 2006** public meeting, EPA representatives will be available to discuss the reasons for recommending the preferred cleanup remedy and public comments will be received.

The RI Report, FS Report, Risk Assessment, Proposed Plan and other site-related documents are available for public review at the information repositories established for the site at the following locations:

Rockaway Borough Free Public Library: 82 East Main Street, Rockaway, New Jersey 07866, (973) 627-5709.

USEPA Region II: Superfund Records Center, 290 Broadway, 18th Floor, New York, NY 10007-1866, (212) 637-3261.

EPA relies on public input to ensure that the selected cleanup alternative for each Superfund site meets the needs and concerns of the local community. It is important to note that although EPA has identified a preferred cleanup remedy for the site, no final decision will be made until EPA has considered all public comments received during the public comment period. EPA will summarize these comments along with EPA's responses in a Responsiveness Summary, which will be included in the Administrative Record file as part of the Record of Decision. **Written comments and questions regarding the Rockaway Borough Wellfield site, postmarked no later than Wed., September 11, 2006, may be sent to:**

Brian Quinn, Project Manager
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866
Telefax: (212) 637-4393
email: quinn.brian@epa.gov

For more information on the Rockaway Borough Wellfield site: epa.gov/region02/superfund/npl/0200766c.htm

ATTACHMENT C
EPA PRESS RELEASE ANNOUNCING EPA TO REMOVE CONTAMINATED SOIL
FROM THE ROCKAWAY BOROUGH WELLFIELD SITE.

Press Release

Region 2 - New York, New Jersey, Puerto Rico and the U.S. Virgin Islands

290 Broadway, New York, New York 10007-1866 www.epa.gov/region2

EPA To Remove Contaminated Soil From the Rockaway Borough Wellfield Site

Contact: Patricia Carr 212-637-3652, carr.patricia@epa.gov; Benjamin Barry 212-637-3651, barry.benjamin@epa.gov

(New York, NY – August 18, 2006) – The U.S. Environmental Protection Agency is proposing to remove soil contaminated with tetrachloroethene (PCE), a commonly used industrial solvent, from the Rockaway Borough Wellfield site located in Morris County, New Jersey. EPA will dig up the contaminated soil and move it to a location specially certified to treat and dispose of it.

"Soil contamination at the Rockaway Borough site has already affected the ground water, and we are now taking action to eliminate a potential avenue to further contamination," said Regional Administrator Alan J. Steinberg. "We have already installed a treatment system to address the ground water contamination."

EPA will also hold a public meeting on August 23, 2006 at 7:00 PM at the Rockaway Borough Community Center, 21-25 Union Street, Rockaway, NJ 07866. The public can comment on the proposed plan through September 11, 2006.

The Rockaway Borough Wellfield Site includes three municipal water supply wells where the ground water is contaminated with PCE and TCE, another industrial solvent. In 1985, the New Jersey Department of Environmental Protection investigated the site and concluded that contamination of the municipal water supply was emanating from multiple source areas within the Borough. Based on these findings, EPA initiated a follow-up investigation to identify the sources of contamination, determine the extent of the contamination, and evaluate potential cleanup methods.

ATTACHMENT D
MEETING AGENDA AND TRANSCRIPT OF
23 AUGUST 2006 PUBLIC MEETING

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

Public Information Session

Rockaway Borough Wellfield Superfund Site
Rockaway, New Jersey

Rockaway Borough Community Center

Wednesday, August 23,2006 7:00PM

AGENDA

I. Welcome & Introduction
Cecilia Echols - Community Involvement Coordinator,
Intergovernmental & Community Affairs Branch, USEPA

II. Site History
Brian Quinn, Project Manager, New Jersey Remediation Section,
USEPA

III. Remedial Investigation
Louis Hahn, Project Manager, Tetra Tech EC, Inc.

IV. Human Health and Screening Level Ecological Risk Assessment
Mike Sivak, Risk Assessor, USEPA

V. Feasibility Study
Robert Chozick, Feasibility Study Manager, Tetra Tech EC, Inc.

VI. Preferred Remedy
Brian Quinn

VII. Questions, Comments, & Answers
Cecilia Echols

Other Representatives in Attendance
Brian McKnight, Chief, Northern Jersey Remediation Section, USEPA

ROCKAWAY BOROUGH WELLFIELD SUPERFUND SITE

ROCKAWAY, NEW JERSEY

Rockaway Borough Community Center

Wednesday, August 23, 2006

7:15 p.m.

P R E S E N T:

Cecilia Echols, Community Involvment Coordinator

Brian Quinn, Project Manager

Louis Hahn, Project Manager

Mike Sivak, Risk Assessor, USEPA

Robert Chozick, Feasibility Study Manager

Bob McKnight, Chief, Northern Jersey Remediation Section, USEPA

T R A N S C R I P T of the above-entitled matter as taken stenographically by and before SERAFINA R. ZINCKGRAF, a Certified Shorthand Reporter, Registered Professional Reporter and Notary Public of the State of New Jersey at the offices of Rockaway Borough Community Center, 21-25 Union Street, Rockaway, New Jersey on Wednesday, August 23, 2006, commencing at 7:15 in the evening.

MS. ECHOLS: Hello everyone. Thank you for your patience. I'm Cecelia Echols. I'm the Community Involvement Coordinator for the Rockaway Borough Wellfield Superfund Site.

The purpose of tonight's meeting is to discuss the proposed plan of cleanup for the contaminated soils within the Wall Street/ East Main Street area.

I hope everyone has taken the handout. If you haven't, you can come up and get a package because we will be, in particular, discussing the proposed plan, and we have, overhead, a Power Point presentation of the overheads.

On our agenda, as you can see, I'm Cecelia. We have Brian Quinn. He will discuss the site history. He's a project manager for this site. He's in the New Jersey remediation section for the EPA.

Then we will have Louis Hahn. He's in the back right here standing up. He will discuss the remedial investigation. He's the project manager for Tetra Tech. That's the contractor for EPA.

Then we'll have Mike Sivak to the far right. He will discuss the human health and screening level ecological risk assessment. He is a risk assessor for the EPA.

Next, we'll have Robert Chozick. He will discuss the Feasibility Study. He's a Feasibility Study manager for Tetra Tech, as well.

Then we'll have Brian discuss the preferred remedy of cleanup for the site, and then we'll open up for questions, comments and answers.

Also, as a representative of EPA, I have Brian McKnight down now. I'm sorry, it should be Bob McKnight. He is the Chief of the Northern Jersey Remediation Section. He's also with EPA.

I would also like to recognize Mayor Lockwood. She's here. If you would like to stand for a moment.

(Mayor Lockwood stands.)

MS. ECHOLS: I guess there's some members from your staff here?

MAYOR LOCKWOOD: Bob Schaefer, Joe Vicente(ph), two of my councilmen; my

Superintendent of Public Works, Joe Rossi and Peter DeJeckyl(ph), licensed operator for the water.

MS. ECHOLS: Thank you for coming. Just to bring an overview, it is a program designed within the Superfund Program to seek community involvement from the community to have you become involved in the decision-making process for cleaning up a site within your community. We cannot just cleanup a site without your involvement. So I'm very happy to see so many of you have come out tonight.

Just to mention, there is an information repository. One is at the Rockaway Borough Free Public Library, and the other one is at the EPA office in Manhattan. I would like to mention that we mailed approximately 300 of these proposed plans to the community. If you have not received one, I hope that you have signed in, and you will be placed on the mailing list.

If you know of anyone or if you have any neighbors who would like to be placed on the mailing list, please give me a phone call, and I'll make sure they're on the mailing

list.

The Public Comment period began on August 11th; it ends on September 11th. There was a Public Notice placed today in The Citizen as part of the Record of Decision. We have a Responsiveness Summary, and that will be a collaboration of all of your comments that we receive by fax, by E-mail or any tonight that are taken by the stenographer, which becomes a part of the transcript.

I only have one ground rule and that is please hold all of your questions, comments and answers to the end of the presentation. Now, we'll have Brian. Could you all hear me? Great.

MR. QUINN: Good evening. I'm Brian Quinn, the project manager for Rockaway Borough site. Just to give a quick overview of the site, it's a little complicated so just bear with me. We can clear up some economist misconceptions you have or anything lighter.

What contamination was first found in the drinking water in 1980. At that time, a treatment system was built and began operation in July of 1981, and is still

operating at this time. To make sure the water that leaves the plant that comes into the Borough is all completely removed, the contaminants are removed before it's sent to everybody to drink.

After that, we did what's called the Remedial Investigation and Feasibility Study, both which we're going to discuss tonight. An earlier version of these were done to investigate what caused the contamination, where it came from; and at the end of that, a Record of Decision was signed which identified three of the source areas which was the East Main/Wall Street area, the Klockner and Klockner area which is over on Stickel (ph) and Elm Street, as well as Raynag (ph) Realty area, which is a little further on the other side of the railroad tracks. It wasn't necessary to do any further investigation to the realty.

A second Record of Decision was issued in 1991, which called for the treatment of the groundwater by a groundwater extraction and treatment system for both the East Main/Wall Street area, the plume that was generated from contamination, and one from the Klockner and

Klockner area. Both of those areas are distinctly different chemicals. The one that's coming from the Klockner and Klockner area is called Trichloroethene, TCE is the chemical name, and also Tetrachloroethene was coming from the East Main/Wall Street area, which is called PCE. They're two different treatment systems being built. One is already built, which is on Cobb Street, which is built by a potentially-responsible party, and it's operating now to start cleaning that plume up.

EPA is in the process of constructing a plume, a groundwater treatment system to clean up the East Main/Wall Street area, and then there were two separate source area investigations, one which we have completed for the East Main/Wall Street, and one that's still ongoing at the Klockner and Klockner site.

So tonight we're here to discuss the investigation for the East Main/Wall Street area, and then the preferred remedy for the contamination. I'll turn it over to Lou to discuss the remedial investigations.

MR. HAHN: I'm Lou Hahn, the project manager with Tetra Tech, contractor to

EPA. We performed the remedial investigation and the Feasibility Study for the most recent face of work here related to soil.

Based on the findings of the last RI that was done in 1991, it was determined that it was necessary to go back out and do additional work to try to determine the source of contamination and soil.

As part of this current phase of work, we delineated a study area to perform our investigation, which is kind of shown here. It's the heart of the downtown area, Wall Street and East Main Street.

You can also see on this figure where the municipal wells are located. Within this area, we had the footprint of the former Morris Canal that was investigated as a potential pathway. We also had various other types of facilities, including some auto body shops, service stations, two dry cleaning facilities, the former M. Hoagland Union Foundry property which is currently occupied by the police department, and the former scrapbook shop here, and then also Memorial Park, because that was part of the current or the former Morris

Canal after it had been filled.

Current study area conditions right now, as you're all familiar with, we're talking about the intersection here of East Main and Wall Street. So here's a view looking up Wall Street from East Main from in front of the PNC Bank building. An area behind the dry cleaning facility, we have parking lot and Municipal Parking Lot No. 2, an area where we did some of our drilling, and then a parking lot at 21 Maple Avenue. That actually comprises part of the former foundry property.

Primary objective of the remedial investigation was to define how far and extent of the soil contamination, and try to determine the location of the contamination, the type of contamination, and the amount of the contamination.

The media that we investigated during this included soil gas, surface soil, shallow subsurface soil and deep subsurface oil. The surface oil really comprises of zero to one-foot depth interval of soil. The shallow subsurface area comprised of one to ten-foot depth interval of soil, and the deep subsurface

soil was the interval from ten feet to approximately 40 feet below ground surface.

The field work during the remedial investigation was conducted in two phases. We did a sight recognizance phase, that was the initial phase work we did, we conducted some geophysical techniques in the field looking for potential underground storm tanks and piping, things that could be construed as possible sources of contaminants.

We also conducted a soil gas survey, a screen technique used to try to identify where there may be hot spots of contamination in soil. You look for the actual vapors coming off of the contaminated soil.

We did some topographic mapping during that phase, and we also did an ecological survey to determine if there were any threatened and dangerous species in the area and also, if there were any sensitive environments in the area within that study area and also a cultural resources survey where we looked at the potential for any significant cultural resources that were there or architectural resources that could be impacted by the work.

We did a field investigation phase where we collected soils, soil samples from surface soils from the shallow subsurface oil, and the deep subsurface oils; and during that, we would take the soil samples and send them off for analysis, volatile organic analysis via laboratory.

We also did some archaeological monitoring during that sampling just to watch for the potential cultural resources that may come up, since the area has some significant history being associated with some of the former Morris Canal and some of the older buildings on-site.

In summary, based on the soil sampling activities, the field investigation that was conducted between October and November of 2003, we collected 19 surface samples, and we had 48 subsurface soil samples between the two intervals, and then we came back out this past April and we did a focused field sampling at the parking lot of 21 Maple Avenue to confirm the existence of a hot spot there.

Based on the soil sample results, we had determined that volatile organic

compounds are present in the soil. Tetrachloroethene, the PCE, was determined to impact the groundwater soil cleanup area which is one milligram per kilogram. Of the surface subsoil collected, PCE was present in ten of the 19, and with a maximum concentration of one sample of 14 milligram per kilogram. PCE was detected in concentrations of up to .73 milligram per kilogram.

During the April 2006 focused field sampling, we confirmed the presence of a hot spot at 21 Maple. Here we have a couple photographs. We have an example of the direct push sampling drill rig that was used on-site. Some of you may have seen the equipment out there that was used to collect some of the shallow soil samples to ten feet below grade.

We also employed the use of a rotosonic drilling rig to collect both shallow and deep soil sampling. This rig was to collect soil samples down to the water table, which was approximately 40 feet at the site.

This figure introduces our cross-section as part of the investigation in the soil. We characterized the soil at the site

determine what it is comprised of, in terms of like what they call lithology.

I'm going to present a cross-section of this point here, B to B Prime. It comprises the deeper soil borings that we took to the top of the water table in the study area. Here is the cross-section showing that same B to B Prime transection here. We have illustrated here the surface cover of asphalt in this area. Out in this area, we had no asphalt so it's most likely vegetated cover in the park.

We have a layer of film material underlying the surface cover comprised mostly with sand, cobble, boulders. We saw some cynders present in the former foundry property fill; and then underlying, we have a layer of sand with gravel and cobbles to the top of the water table, which was approximately 40 feet below ground surface.

So it's kind of a summary of the remedial investigation activities; and at that point, Michael Sivak will talk about the risk assessment findings.

MR. SIVAK: Well, I am EPA's Risk Assessor tonight, and I'm going to present what

we found in the human health and the screening level ecological risk assessments, and we're going to start with the human health.

As part of the RIFS process, the remedial investigation feasibility process, EPA conducts a human health assessment to determine what are the affects of exposure to these contaminants that we found on human health and on ecological receptors.

We're going to start with the human health. Basically, the purpose of the human health risk assessment is to answer two primary questions. The first question is what are the risks to people that are exposed to this contamination right the way the situation currently is with the lay of the land the way it is, and the second question is what are the risks in the future if no remedial action is taken?

So what are the risks in the future if no remedial action is taken to people who can come in contact with the site in the future? We look at how people might be exposed, and what kind of scenarios they might be exposed under. So, for example, we looked at potential

pathways are incidental ingestion of contaminated soil. Dermal absorbing of contaminated soil, you get some contaminated soil on your skin, that could be absorbed or across in your skin. Partly inhalation could be dust kicked up. Volatile compound inhalation.

The contaminants that we're looking for at this site are volatile, which means they can vaporized. If you spill -- probably the best example that everyone is most familiar with is fingernail polish remover or gasoline. When you're pumping gasoline and you see those vapors coming off of it when you're pumping it into your car, those are volatile vapors. Part of that gasoline that you're pumping in is pumping off gas vapors that go up off of that. We look to see those conditions here. We looked for these kinds of exposure pathways.

In the area that we were investigating, the surface soils beneath the parking lot by the populations that are likely to be exposed to them, which are workers in these facilities, as well as future construction workers. If, for example, there needs to be

some kind of utility work that's done for subsurface utilities or if there needs to be construction work where people would have to access soils that are a little bit deeper.

So we looked at the surface soils and we looked at all of the soils which includes the surface and the subsurface, and what did we find from the results of this investigation? Well, basically we looked for carcinogenic health affects and noncarcinogenic risk assessment ability.

The site workers, the construction workers who might be exposed under any or all of those pathways that we just talked about, they're risks within or below our acceptable risk levels. So there really are no health risks, no unacceptable levels of health risks now and in the future.

It's important to point out that although these risks and hazards are associated with soil exposure are below these acceptable levels, the results of the remedial investigation did identify PCE concentrations above this impact to groundwater, which means even though we have contamination in the soil

that's not associated with unacceptable health risks, there's still enough of it in there that it might continue to leech out to the groundwater, and it still might pose an impact to the groundwater.

These are the results of the human health risk assessment. While we were conducting this risk assessment, EPA also recognized that because of the type of contaminants and the levels we're seeing out here, we needed to look into the possibilities of vapor intrusion, which is the likelihood of these contaminants volatilizing off of this deeper soil collecting underneath structures and also the groundwater, excuse me, collecting underneath these structures, and possibly infiltrating indoor airspaces where people live or where people work.

So this wasn't really part of this particular risk assessment; but because we kind of conducted some of these investigations over the last few months, I wanted to just bring that up here tonight. So we have that effort ongoing.

We have collected some data.

We're currently looking at it. We will be back to collect some more data regarding this vapor intrusion concern, and we can talk about that more in the question-and-answer session, if there are some questions.

The screening level ecological risk assessment is the other type of health evaluation that the EPA performs, and this is on ecological receptors. These are the three basic findings, and really what it comes down to is the concentrations that we found in our soil investigation are pretty much below or consistent with background areas, or they're below sort of our reference concentrations for ecological health effect. So that's good.

The other thing that is really important to know is that there's just not a lot of usable terrestrial habitat in this study. We're talking about some pretty suburban areas; the areas are pretty much paved. So there's not a whole lot of ecological habitat in the studies we looked at, and we take those factors into account, low levels of these volatile chemicals and the lack of real viable habitat.

We just did not have any

ecological risks that were of concern from this site. With that, I will turn it over to Bob.

MR. CHOZICK: Bob Chozick with Tetra Tech. I'm going to talk about the Feasibility Study, which is the next phase in the process of collecting a remedy. In the Feasibility Study, we evaluate the data from remedial investigation and risk assessment, and develop our remedial goal, what we want to achieve through our remedial alternative. We look at technologies, alternatives, and evaluate them to come up with the performed remedy that we'll talk about at the end of the presentation.

The first step is to develop objectives. We know what the remedial investigation found, and the risk assessment, as Mike said, there were no unacceptable risks to human health found based on the contaminated concentrations in the soils. However, there is the potential for contamination to migrate into the groundwater based on the levels observed.

So we have set the goal and was based on The New Jersey Department of Environmental Protection Soil Cleanup criteria to protect groundwater, basically. It's one

milligram per kilogram of PCE in the soils, and it's the number they determined is protective of groundwater.

The next phase of the Feasibility Study, we look at a full range of treatment technologies that can be used to address the contaminants in the soil. They're screened through several criteria based on the site conditions, the access conditions, and the contaminants that are found, and a short list of those technologies is then developed, and then combined to come up with the potential remedial alternatives that can be implemented to clean up the contaminated soils and meet the remedial objective.

After the alternatives are developed, the EPA has come up with nine criteria that they use to look at the alternatives to compare them and to select the best alternative to address the soils.

The first two criteria are considered threshold criteria. One is overall protection of human health and the environment. That's to prevent any risks to human health, the risk to the environment.

The second is the compliance with applicable or relevant and appropriate requirements. That refers to regulatory requirements developed by the EPA or state, cleanup goals, guidance values that should be achieved by any remedial alternative.

The EPA considers these threshold criteria, any alternative that can't meet these two criteria is basically considered an unacceptable alternative.

The next five criteria are balancing criteria. Basically, these five criteria are used to compare the various alternatives and rank them which are the best alternatives to address the contamination.

The first long-term effectiveness and permanence deals with the risks remaining after the remedy is implemented. That's how much contamination is left, what risks are associated with that, and is it possible for those risks to increase again or is it a permanent remedy that the risk cannot return?

The second, reduction in toxicity, mobility or volume through treatment deals with eliminating the contamination, making

the contaminants less toxic, stabilizing them so they can't move. For example, the area from the groundwater to the soils or reducing the overall quantity of contaminated material.

The short-term effectiveness refers to the risk during the implementation of the alternative. If the material is suggesting to be treated or removed, what risks are there to workers performing the work, the community around the area and the environment during those activities?

The implementability criteria is how easily or difficult it is to implement an alternative; are there access restrictions that prevent us from being easily implemented? Criterias such as that, and the last is the cost of the alternatives is compared. That's the capital cost to actually do implement the remedy, as well as any long-term operating costs to maintain a treatment system if there is one in the alternative.

The last two criteria, modifying criteria, State's answer. The state DEP has the opportunity to review the preferred remedy and Feasibility Study and concur or comment on the

EPA's preferred remedy. That process is currently underway. The EPA is, at the same time we're here and the public is reviewing this information, the DEP is also reviewing the Feasibility Study for their recommendations, and the last criteria is community acceptance, and that's how the community, you, feel about the remedy that's selected.

We have this presentation, the Public Comment period where we take your input and consider that in the selection of the final remedy for the site.

In the Feasibility Study, we went through the screening process I described, and ultimately four alternatives were developed to deal with the contaminated soil areas that have PCE contamination that may be impacting the groundwater.

The first is no action alternative. The second is a limited action alternative. The third is In-Situ remediation, SVE, Soil Vapor Extraction, and the fourth is excavation of the contaminated soils.

The no-action alternative does not meet the threshold of criteria. The EPA

Superfund Program requires that this alternative be retained, to compare the other alternatives to compare the risks reduction, other factors of the alternative.

This will not meet the cleanup criteria. It won't protect the groundwater if the soils are currently impacting the groundwater. There's no cost associated with that alternative.

Limited-action alternatives are generally institutional controls or access restrictions that don't actively remediate contaminated soil, but do prevent exposures through education programs, notices, access restrictions, deed notices, those types of actions.

This alternative, this scenario, because the objective is to protect migration of contaminants to groundwater, this alternative also does not meet the remedial action objective for the site and would have a cost of about $27,000 to implement those controls.

The third alternative includes soil vapor extraction treatment at the soil area near the dry cleaning building under the parking

lot, and an excavation of contaminant of the hot spot of contamination at the 21 Maple Street parking lot. This alternative through the soil extraction, the excavation, would remove all of the contamination that's been determined to be potentially impacting the groundwater, and also includes a contingency system, the area behind -- these are the two areas I'm discussing. The hot spot in the parking lot at 21 Maple is right here.

These green samples show the additional work that was done just in April of this year. That would be excavated under this alternative. The other area is right here, and the parking lot behind the cleaners. That would be street treated by Soil Vapor Extraction. This one has not been totally delineated, as this one has, and there's the potential that there may be some contamination under the building.

This alternative includes the potential to add additional wells beneath the building to provide additional treatment if contaminated soils are found underneath the dry cleaning building.

The last alternative we looked at is excavation of the two areas. Again, this would remove the contamination, prevent potential migration of contamination into the groundwater; and again, this also includes the contingency to do soil vapor extraction beneath the building if the contamination is found to be present under there above the cleanup criteria.

Again, this slide shows the same hot spot area out at 21 Maple Street, and here this area behind the dry cleaner building. Again, it's not been fully defined, and there is the potential that that could extend under the building. During the design phase, which is the next phase of the project, a pre-design investigation would be conducted, additional sampling in this area to be determine if there is contamination below the building that needs to be treated; and if that's the case, the contingency plan can be implemented.

Again, it's the same plan that's shown on the previous slide with soil vapor extraction wells beneath the building.

With that, I'm going to turn it over to Brian who is going to talk about the

selected remedy.

MR. QUINN: Well, you just finished hearing everything we discussed tonight about the investigations that led us, the remedial investigation to define the extent of the contamination, the Feasibility Study which then evaluated the best ways to get rid of the contamination, and now what we did is after we got these reports we evaluated the alternatives of the four that Bob had just gone through before, the no action, the limited action, the Soil Vapor Extraction with hot spot removal, as well as the fourth one which is the one that's on the board, the excavation with off-site treatment of the excavated material, and potential SVE Soil Vapor Extraction system installed.

The EPA prefers the remedy that's on the board, the fourth remedy, basically, because it would -- the first two really do not remove the soil. So there is a continuing source to the groundwater, and the ultimate goal of us being in this Borough is to clean the groundwater so that the Borough is not responsible to be treating the water any longer,

at least as far as the contaminants in the water.

If you keep the source area, it's the longer that the treatment systems that are installed will have to operate. If we eliminate the source, it shortens the treatment time for the groundwater treatment buildings.

The other way we looked at it, we looked at all of the evaluation criteria that Bob had gone through, and this one we felt was the best fit for all points as well as the cost.

The third remedy and fourth remedy are closest in accomplishing the goal of removing the contaminants, and the fourth one seems to remove it with the potential for if we need to add on the extra Soil Vapor Extraction, it extends the cost a little higher; but if we don't find any need to, it's obviously the most cost-effective way to remove it.

As well as Bob just eluded to before, during the design process, we will be working closely with the Borough, the business owners, the police, and anybody else that would be involved to make sure that once the design of the process is ongoing, we know what we're going

to do. The impacts to the parking area or anything else, we'll try to in minimize those things with trying to time things or to allow for the businesses to continue operation as well as try to keep as much of the parking lot available for use as we can.

With that, we'll open it up to questions and answers.

MS. ECHOLS: We're going to open up for any comments, questions. One person at a time, and please stand and state your name for the stenographer so that she can take that down correctly.

Would you like to come up?

MR. BORIS: My name is Dr. John Boris. I was a former councilman with the Borough for 13 years, on the planning board for three. My credentials, I was with the EPA as an inspector of, let me give you, The Chief of Sampling of Analysis For the Emergency Response Team of Region II. So I worked with Joe.

I'm going to change my thought process here a bit and sort of ask some questions of the EPA, which have been on my mind for a while.

About 15 years ago, I stood in this very office, and I said why don't you try Soil Vapor Extraction. Fifteen years later, we're going to try it. Congratulations to you, but I have to ask the question why not then?

EPA, I was part of the team, did a study at Massachusetts and noticed it with under the Superfund Investigation Technology Assessment Or Evaluation, the site program. We removed most of the volatile organic chemicals in a machine manufacturing process like Klockner's within 90 days. I said at the time why don't we try and look at it. They said, well, we're going to evaluate it later. It's now 15 years later.

What I'm worried about is the time element here. We have been under this pressure of drinking contaminated water or the possibility of it; and luckily, Joe has the process whereby we remove with carbon and even the second guy in charge of research and development said at EPA that's not the best way to go, okay? So now we're at this point and congratulations to you; you finally saw the wisdom of doing something different. It was a

soil type. We all know what resides in the soil. What concerns me is how long it takes to get these evaluations done. You know, I'm on many Superfunds. I've been on Love Canal. I do Superfund sites in Brooklyn, New York. We get thousands of samples per day. I see 19 samples and 46 samples respectfully. That's a picnic, really, to get an idea of what's happening here.

My point here is this: We got to really operate to get things going here. Last time we met here 15 years ago, the project, when the time was, to be for not treating the water any longer, 27 years. We can look that up; 27 years. You know what it is now? It's 30 years. I'm saying to myself, did we fail somehow? Now, I'm glad we're doing this, but it sort of takes me aback to ask these questions in front of you. It's sort of embarrassing because I do wear an EPA hat. I'm an unpaid consultant to the EPA of environmental education. I have to tell people we're really moving forward, but Rockaway Borough is my interest, and I want to see it done quicker.

For example, I would ask the question: How much remediation of the

groundwater have we done? Are we 15 years into it? Are we going to reach 27 years? I don't think so. Could you answer that question? When we will stop treating water? Is there an answer to that question? Fifteen years ago, it was 27 years. Look up those records. Maybe some of you people weren't even here, people here may be retired.

How about UV light? UV light destroys chlorinated hydrocarbons. I mentioned that years ago. I said put a UV light in the system. They do that in Roxbury. They use a UV light, it breaks down chlorinators. Boom. You know what a UV light costs? Maybe a thousand dollars, $2,000.

I think that's about what I wanted to address. My chagrin as to seeing Rockaway Borough, not the short end of the stick, but I think we're talking a lot about controlling our contamination. I see more and more contamination occurring. Joe has no control over it. I find more and more particles, charcoal particles in my water system. You know, every one of those is removing some sort of volatile organic chemical.

The system is incomplete.

So I want you to consider that I'm on your side, and don't tell my boss at EPA in Region II; but as an unpaid consultant, I really would like to see this move a little bit faster. Thank you.

MS. ECHOLS: Thank you.

MR. QUINN: I think it's a common misconception here. I think the Mayor has expressed it to me as well as the town clerk, the water you drink is not contaminated. So it is well treated. It's doubly treated.

The system was installed with the addition of carbon a couple of years later to help polish the water. The water that comes through is fine. As far as the rest of the stuff, we'll look into that. I want to make sure that I clear up that misconception. The water you drink is not contaminated. The groundwater before it gets into the system is contaminated, and that's what we're here to address.

MS. ECHOLS: Anyone else have a question? Sir, would you please come forward. Thank you. State your name.

MR. BERNARD: Bernard, my name is Arnold Bernard. I live on Union Street. My question to you is during this remediation, what type of air monitoring are you going to be doing? When I say air monitoring, I don't only mean particle in the air from soil disruption, but also vapor and what protections are in place, as far as I go to the barber shop there. What are the concerns there as far as high volume collection of vapor in that shop? Is there anything being done with that?

My other concern is when would this work be done? During the evening hours, the daytime hours, and what's in place for that when the work is done? That's all.

MR. SIVAK: The way I hear it, sir, you asked two questions. The first is what type of community health and safety plan will be in place while the work is being done while the remediation is being done, and the second was -- shoot, I forgot the second. What was your second question? I'm sorry.

MR. QUINN: The time.

MR. SIVAK: When will the work be done. Okay. The next phase, once a remedy is

selected, once we gather everybody's comments tonight and answer them, we will select a remedy and that's memorialized in a document called a Record of Decision. It's signed by our regional administrator, and it becomes the official record of EPA's decision on how we will remediate the soils at the Wall Street site.

After that, the next step is what we call remedial design. We're going to come out and collect a little more data to try to figure out exactly where is the contamination. That's part of the remedial design.

Another component of the remedial design is to develop a community health and safety plan. EPA has a lot of experience in excavating soils in communities. Unfortunately, we have a lot of experience in dealing with sites like that, particularly in our region where we deal with sites in New York and New Jersey; and fortunately, we have funded sites in communities all of the time. We understand the types of controls that we need to have in place. The types of fence line monitoring that we need to have in place to make sure that the people who live right on the other side of those fences

are the people who work right on the other side of those fences. We can provide a level of confidence that nothing is getting off of the site; and if our fence line monitoring does suggest that perhaps something is going off-site, we typically introduce controls like shutting down the site, wetting down the soils to reduce the dust and things like that that might escape.

The other part of your first question was what about the vapors that may be released as we go on and dig up some of the soil? That's going to be part of our plan system.

The one thing about the vapors though especially in the ambient air and especially at the concentrations that we have seen here, once these vapors are introduced, there's a lot of dispersion. There's a lot of dissolution to often times very, very quickly to levels that are below levels of concern. So we will certainly monitor for that, and that is something that is not an unlikely phenomenon.

MR. BERNARD: Will there be random monitoring throughout the community?

MR. SIVAK: Ambient monitoring throughout the community?

MR. BERNARD: Random, different streets, different neighborhoods.

MR. SIVAK: We can do that as we develop our community health and safety plan.

MR. QUINN: We'll probably have more information, not as formal as this session, but we've had in the past informational sessions where we can have more focused things to discuss, specific topics, especially once we talk with the Mayor and we keep them informed, when they find that there's a need that we may need to further inform the public. We would like -- we have come out twice before to meet with the residents to discuss the project, and we will just continue to come out anytime we need to.

MR. BERNARD: Is there going to be any type of newsletters where we can go to the town hall and pick them up to keep us abreast of what's going on as far as that?

MS. ECHOLS: We prepare Community Updates. If you feel that you need -- if the community feels that they need more than the

community Updates we put out -- we usually put out one every six months; but if you feel you need one every month or every two weeks, we can do that.

MR. BERNARD: While the work is going on?

MS. ECHOLS: Absolutely.

MR. BERNARD: Weekly updates printed out where I can stop there on my way to work and pick something up, just to keep updated what's going on.

MS. ECHOLS: We can prepare that for you.

MR. QUINN: The second part of your question as far as the timing, we can't tell you when it's going to start, because the first phase is we have to design, then the design puts a cost element together to go to our headquarters to give us money to do it. Once it falls into place, we'll be able to get out there and do the actual physical work.

While the design is going on, we'll be working with the community. We already had several meetings with the groundwater treatment plan with the Borough, the police

force and everybody that make sure we don't do something during school hours so the buses can have free use of the roads; things of that nature.

Nighttime excavation is probably not a smart thing because it's loud. We don't want -- people are going to try to sleep. We're probably going to do things after rush hour, before rush hour, things of that nature. We're sensitive to those things, and that will come out during the design process.

MR. BERNARD: Will there be road closings for this?

MR. QUINN: The parking lot that will be closed off, and there could be something temporarily while rigs are being moved in and out. We may have to stop traffic so a truck or backhoe or whatever we use has to get out on the roads, because it's not like it's easy for a big Mack truck to make a left-hand turn in that area.

MR. BERNARD: One other thing I didn't bring up is how about on-site security? Who is going to be responsible for that.

MR. QUINN: That will be part of

the project, if it's necessary; and again, if the police feel they can handle it, they'll do it. If they feel it's something outside of their thing, it's something that could be brought up when we go out and do the work, like we have a security guard on-site.

MR. BERNARD: To make sure that drums and something --

MR. QUINN: Correct.

MR. BERNARD: -- doesn't leave the site and in the middle of the street someplace by some child?

MR. QUINN: Right. With this one we have been talking to the police about securing when we stage our stuff for the groundwater, to protect -- they'll usually take the keys out of the rigs, but to make sure windows don't get broken, gages, things like that that kids could say let's play on it and break it.

We did ask them to make extra spins by it every so often; and if the need arises, we can hire someone.

MR. SCHAEFER: Bob Schaefer, Councilman Schaefer. How much of the parking

lot is actually going to be impeded and for how long? It's a pretty busy thoroughfare. As you know, the police department is right there. We use that for ingress in from Wall Street and over, as well as the businesses there. There are businesses there that continue to operate that rely on the parking and access from the rear, deliveries and such.

So, you know, those are things that we here about from the Mayor and Council, and I think we need to take particular care if there is going to be interruption, to make -- be well indicated an coordinated.

MR. QUINN: That will come out during the design. Until we get out there and see how much area, how much room the rigs need to work, you know, they may be able to work in a minimal area or a different area. That will all dictate how much the parking lot will have to be taken out.

Most of the work should only take a short-term, like around three months or so to do the excavation; hopefully less, but, you know, for the excavation.

MR. SCHAEFER: You're only take

taking 40 yards?

MR. QUINN: Twenty yards from one spot and 20 from the other spot. You got to excavate it, and then you have to sample it to make sure you got all of it, excavate a little more to make sure you didn't miss. You have to get a piece, get it off-site, logistical issue that extends the timeline, but that's the answer.

DR. BORIS: Is there a requirement for a periodic or a five-year progress report on all Superfund sites; and if so, have they been added to the library's progress report?

MR. QUINN: They're called five-year reviews, and they're required at the completion of the remedial action; and because when I started talking tonight, I mentioned how complex the site is, there's two groundwater plumes and two source areas. Each one of those is ongoing. Until all four of those are completed, then the remedial action for the site is considered closed; and at that point, then, once the final remedial action is completed, from that date that that's assigned, we do a

remedial action report five years from then and five years from then --

DR. BORIS: It's about 20 years.

MR. BERNARD: Arnold Bernard again. I have one question. Could you define to us, the public, what you mean by the word plume?

MR. QUINN: Sure. The plume is the contamination that's in the groundwater. The best way I can think to give you an idea is an oil slick on water. It's basically water -- contamination of the water that travels with the path water flow and it sits there. That's what a plume is considered, the amount of contamination in the groundwater that they refer to it as a plume to tell you that that's to signify what part of the groundwater is contaminated.

MR. BERNARD: That contamination is what's off-gassing or vaporizing, I should say, off of that plume?

MR. QUINN: Yes. When we were at your house, part of the vapor intrusion stuff, that's what we would look at.

MS. ECHOLS: Anyone else have a

question or a comment? Please come up.

MR. HILER: Hiler, H-i-l-e-r, Scott Hiler. I have a couple of questions. I have a whole file of this case and of both contamination plumes. My question, first question, I know you're dealing with the Main Street plume at this point, but is the Klockner and Klockner plume completely cleaned at this point? That's my first question.

MR. QUINN: No. The treatment system was just turned on in January of this year and just started operation. It's still brand new.

MR. HILER: In regards to that contamination plume, what sort of properties were tested for vapor intrusion in their basements and in their homes in that area?

MR. QUINN: In the Klockner and Klockner portion again, over in the Elm, Stickel location of town. We initially went out and did 17 homes, a combination down Maple Avenue; and to cover both applications, we did nine and eight homes of -- we tried to take a representative sample of every other home.

Based on those samples, we are

still evaluating the data and going out to do some further data, a more extensive study in the next couple of months. We're going to send letters out asking people to come in.

I initially sent out 30 letters to people, and a lot of people weren't -- didn't reply back and weren't interested in part of the study to begin with. These are people that allowed to us come into their homes; and hopefully, more will participate in the future.

MR. HILER: I find it really disturbing that New Jersey has 120 Superfunds, which is more than any other state in the nation, and has there been any responsible parties identified with either of these plumes; and if so, has there been any litigation, settlements or any payment on their behalf?

MR. QUINN: The Klockner and Klockner plume, the responsible parties are the owners of the property. They're the ones that are cleaning up both the soil, and the tenants at the time are the ones who are cleaning up the groundwater. Since then they've been bought and sold. They're the people that are doing the cleanup.

The East Main/Wall Street area, there was never a defined responsible party which is why EPA is doing the cleanup. There were a few smaller parties that settled.

MR. HILER: That's what I'm trying to determine. Who are those parties? Do we have them by name?

MR. QUINN: I have to go back to look at the settlement that was prior --

MR. HILER: They'll be responsible by the cleanup or EPA?

MR. QUINN: EPA is funding this.

MR. HILER: That concludes my questions.

DR. BORIS: I guess it's a monitoring question: What part of this remediation is Rockaway Borough going to pay, if any?

MR. QUINN: None.

DR. BORIS: Thank you. It makes me feel better.

MR. BERNARD: Arnold Bernard is the name. Has there been any kind of, I don't want to use the word study, for lack of a better word that comes to mind, but how this is going

to affect our property values? The reason why I bring that up is because I have a friend at work that was looking to purchase property up here, a house up here; and when they found out this was a Superfund site, they decided not to buy.

MR. SIVAK: I'll try to answer it and Bob you can --

MR. MCKNIGHT: The site has been around for a very long time. I think whatever impacts you would expect to see have already occurred. We're talking about a very small aspect of the overall site, which is cleanup.

MR. BERNARD: Is there any publicity that's going to be done when it has been cleaned up?

MR. MCKNIGHT: When it has.

MR. BERNARD: There hasn't -- is there any timeline at this point?

MR. MCKNIGHT: Not at this point.

MS. ECHOLS: Any more questions? State your name.

MR. HAFNER: H-a-f-n-e-r. It's rather vague: When are they going to start digging up the ground and when are they going to be done with the soil? The soil is -- getting

rid of the soil is a key issue, because that's where the contamination is. As long as the soil is there it continues to leech; is that correct?

MR. QUINN: Yes.

MR. HAFNER: When would they have treated the soil? When are they going to start, and when is it going to be done?

MR. QUINN: As I stated earlier, we come -- after we're finished here, the next is September 11th for the people who couldn't come here today. We take those comments and make the decision on the remedy which we prefer, the fourth remedy of excavation.

If that's the final remedy, we put it in the Record of Decision. From that point on, we start the process which we look at the area, we design the remedy, and then we fund the remedial action. I can't give you a timeline, because based on the EPA funding is how everything progresses.

If the fund suggests and the timing is right, it's going to move smooth, but if there's a blip because funding is cut, it's hard to say when we'll do stuff. That's the process. We have to design it first and then

actually go out.

So we would love for it to happen tomorrow, but we still have steps in the process to go through.

MR. HAFNER: My concern is it's been 15 years so far. Nothing has been done. Nothing has been done about the problem.

MR. QUINN: We have one treatment that's up and running, and the other one which is about to be constructed.

MR. HAFNER: That was done by a private party.

MR. QUINN: Ours. The EPA is in the process of being installed. We have been talking about, like I mentioned earlier, with the Borough about coordinating the insulation of wells as well as other stuff.

MR. HAFNER: That's the one design by the Army Corp. of Engineers to treat the water?

MR. QUINN: It was designed by the BRB. They designed it as part of a settlement, both systems. The Army Corp. is actually putting it in place.

MR. HAFNER: They're building it?

MR. QUINN: Correct.

MR. SIVAK: That design, even though it was designed and built by the responsible parties, it was still done under EPA oversight. We still reviewed that entire process.

MR. HAFNER: My concern is still you can come back here in five years for another meeting and still nothing has been dug up.

MR. QUINN: We're hoping that won't be the situation.

MR. HAFNER: But what you're telling me is you can't answer that question?

MR. QUINN: Unfortunately, I can't give you a concrete answer on that.

MR. HAFNER: Thank you.

MS. ECHOLS: Any more questions?

MR. HILER: Scott Hiler again. Back to the responsible parties, how come it was paid for by the responsible parties on the plume by Elm Street, but funded by the EPA on East Main Street, especially after there was a settlement where you say it was unknown or you claim to say it's unknown?

MR. QUINN: I just claim that I

don't know the specifics of the settlement. The reason the other parties are, they had the financial wherewithal to do the cleanup. The other parties, the reason they would settle such a small amount, they don't have the financial wherewithal. So they settled to the most of their capacity to help pay some past costs.

If there was somebody who was found to do it, we would gladly have them do it. It's either sit there or EPA has to do the work. That's the nature from the Superfund.

MR. HILER: From what I understand, it was an Act initiated by congress and designed for the polluters themselves to pay, not the tax payers. So I kind of don't understand how it's on the ability to pay principal where the polluters pay if they can, not, you know -- I don't understand that quite well.

MR. SIVAK: That concept of the polluter pays, the Superfund was a tax that was levied on corporations and industries that created or processed hazardous waste. That was the Polluter Pays Principal. That tax expired I think it was in '96, the mid 90s, somewhere in

there. So now that fund is just whatever is left of it. There's no more money going into it at all.

When we have responsible parties, we offer them the opportunity to perform the cleanup under EPA oversight. If they have the financial wherewithal as I said before. If they don't have the financial wherewithal, then EPA funds the cleanup under the Superfund.

MR. HILER: One more question: How long have we known the contamination has been here? I know we discussed it around 1981 or 80. Do we know how long it's been here before then?

MR. QUINN: No.

MR. HILER: We don't. So potentially whoever did this, whether it was accidental or intentional, this could have been around for decades; is that a fair statement?

MR. QUINN: Sure.

MR. HILER: This could have been potentially harming the drinking water of the people up until 1980?

MR. QUINN: I mean it could be. I don't know what the procedures were to test

water back in the day. So I can't...

MR. HILER: This further just disturbs -- makes me disturbed that if that was intentional, just to know that they could have affected the health of thousands of people for decades until this was discovered in 1980.

I was born in 1980. I probably escaped a lot of contamination where a lot of people in this room might have been subjected, and I think this should be criminal if this was found out to be intentional. Thank you.

MAYOR LOCKWOOD: Mary Lockwood, I'm the Mayor of Rockaway Borough. I happen to have been around at that time, and I remember at that time when our water was tested. There was nothing to actually test -- the test had not been invented yet for PCE and TCE. We were one of the first to find out we had pollution. The test hadn't been invented.

DR. BORIS: I'll confirm that with Mary. I was there before Mary. I was head of Public Works, Commission of Public Works. It's got to be 50 years. Our water came out bacteriologically sound, not one organism. Why? Because nothing could live in it. There were no

methods of determining.

Mary is absolutely correct. The technology advances to a point where we're determining parts, one part per billion is one second in 33 years, and that's how far we're going down.

We're locating those things that are dangerous, and we're trying to correct them. I'm on EPA's side of this, because we didn't have the technology which to work with before.

MS. ECHOLS: Thank you. Any more questions? Anymore comments?

MS. HOOK: Bonnie Hook, 23 Jackson Avenue. I want to know if anything has been done, or do we know that we're preventing any further contamination?

MR. QUINN: Well, the people in the areas, they have to follow strict guidelines for hazardous waste. They have to document with anything they do with waste. So there's a lot less chance of somebody doing something. If they get so much in, they have to show that they get rid of so much.

MS. HOOK: You're monitoring them?

MR. QUINN: Different people monitor. The State has some responsibilities and I'm guessing the county.

MS. HOOK: Is there any difference now than it was years ago?

MR. QUINN: Yes.

MS. HOOK: Especially since we know it's a site, it's being more aggressive.

MR. QUINN: Just in general, the requirements for people who do deal with any kind of hazardous materials is a lot stricter nowadays than it was 15, ten years ago.

MS. HOOK: Nothing special because it's a site?

MR. QUINN: No.

MS. HOOK: Thank you.

MS. ECHOLS: Any more questions?

(No response.)

MS. ECHOLS: Any more comments?

(No response.)

MS. ECHOLS: My name is, as well as Brian's are on the slide, also in your handouts. You can E-mail Brian or myself with any more comments or questions. You can call us, and all of your comments and questions will

be part of the Responsiveness Summary, which is part of the transcript which will be included in the Record of Decision signed by the regional administrator.

DR. BORIS: Is that to one person or both of you?

MS. ECHOLS: You can send it to either one of us. You probably want to send it to Brian.

DR. BORIS: Thank you.

MS. ECHOLS: If you want, you can send to it me and I will send it to Brian or you can call the 800 number.

DR. BORIS: Okay.

MS. ECHOLS: In the future regarding this project, you can always reach out to Brian or myself. We're always available to answer any of your questions or concerns about the site.

I would like to thank everyone for coming out this evening, and the Public Comment period will end on September 11th. Thank you.

(Hearing concluded at 8:23 p.m.)

C E R T I F I C A T E

I, SERAFINA R. ZINCKGRAF, a Certified Shorthand Reporter, Registered Professional Reporter and Notary Public of the State of New Jersey do hereby certify that prior to the commencement of the examination the witness was duly sworn by me to testify the truth, the whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is a true and accurate transcript of the testimony as taken stenographically by and before me at the time, place and on the date hereinbefore set forth, to the best of my ability.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to the action; and that I am neither a relative nor employee of such attorney or counsel; and that I am not financially interested in the action.

Serafina R. Zinckgraf

SERAFINA R. ZINCKGRAF, CSR, RPR
License No. XI01637

APPENDIX IV

ADMINISTRATIVE RECORD INDEX

ROCKAWAY BOROUGH WELLFIELD
OPERABLE UNIT 3
ADMINISTRATIVE RECORD
INDEX OF DOCUMENTS

3.0 REMEDIAL INVESTIGATION

3.4 Remedial Investigation Reports

P. 300001 - 300735 Report: Final Remedial Investigation Report for Remedial Investigation/Feasibility Study, Rockaway Borough Wellfield Superfund Site, Wall Street/East Main Street Site, Rockaway Borough, Morris County, New Jersey, prepared by Tetra Tech FW, Inc., prepared for U.S. EPA, Region 2, February 2005.

4.0 FEASIBILITY STUDY

4.3 Feasibility Study Reports

P. 400001 - 400129 Report: Final Feasibility Study Report for Soils at Rockaway Borough Wellfield Superfund Site, Wall Street/East Main Street Site, Morris County New Jersey, prepared by Tetra Tech FW, Inc., prepared for U.S. EPA, Region 2, August 2006.

10.0 PUBLIC PARTICIPATION

10.9 Proposed Plan

P. 10.00001- 10.00011 Superfund Program Proposed Plan, Rockaway Borough Wellfield Superfund Site, prepared by U.S. EPA, Region 2, August 2006.

APPENDIX V

NJDEP'S LETTER OF CONCURRENCE

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

Mr. George Pavlou, Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007-1866

SEP 27 2006

Re: Rockaway Borough Wellfield Superfund Site
Record of Decision

Dear Mr. Pavlou:

The New Jersey Department of Environmental Protection (NJDEP) has reviewed the "Record of Decision, Operable Unit Three, Rockaway Borough Wellfield Superfund Site, Rockaway, Morris County, New Jersey" prepared by the U.S. Environmental Protection Agency (USEPA) Region II in September 2006 and concurs with its selected remedy to address groundwater contaminated with volatile organic compounds at the site. The selected remedy addresses the contamination source for the Wall Street/East Main Street area of the site.

The major components of the selected remedy include:

- Excavation of an estimated 40 cubic yards of soil contaminated with volatile organic compounds;
- Off-site treatment and/or disposal; and,
- Soil Vapor Extraction, if necessary, to augment the soil excavation.

NJDEP appreciates the opportunity to participate in the decision making process to select an appropriate remedy and is looking forward to future cooperation with USEPA to implement the selected remedy.

500151

If you have any questions, please call Edward Putnam, Assistant Director of the Remedial Response Element, at 609-984-3078.

Sincerely,

Irene Kropp, Assistant Commissioner
Site Remediation and Waste Management Program

C: Edward Putnam, Assistant Director, Remedial Response Element, NJDEP
Carole Petersen, Chief, New Jersey Remediation Branch, USEPA